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Original Articles.

A SERIES OF MISTAKEN GYNECOLOGIC DIAGNOSES.*

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BALTIMORE.

While it is advisable to chronicle our successes in diagnosis and treatment, I think it is equally necessary for us occasionally to look back and see where we have failed to make an accurate diagnosis before operation, or to critically review our judgment in a given case to ascertain if, in a subsequent and similar case, we could not do better.

From a perusal of the literature one is often led to believe that the exact nature of abdominal tumors is easily determined before operation. While this is undoubtedly true in the greater number of cases, yet it is well to remember that in a goodly number of instances, before operation, it is only possible to determine that the operation is necessary, the exact nature of the malady only being ascertainable when the abdomen is opened. From the accompanying group of cases, which I report in detail, the surgeon who does not always make a positive diagnosis before operation, or the one who may perchance render an erroneous opinion, will possibly derive a certain amount of comfort.

CASE 1.—Diagnosis: Very large ovarian cyst. Actual condition: A partially parasitic uterine myoma, associated with 51 liters of ascitic fluid. (Fig. 1.) Recovery.

Patient.—Woman, aged 54, unmarried, was admitted to the Church Home, Oct. 29, 1902, complaining of marked abdominal enlargement.

Examination.—Her face presented a drawn, pinched appearance, and she was very thin. The abdomen was tremendously and uniformly distended. From the pubes to the sternum in the mid line there was dullness, in both flanks tympany, and on percussion a very distinct wave of fluctuation was easily detected. A diagnosis of ovarian cyst was made, and after a delay of a few days, on account of a slight bronchitis, the abdomen was opened.

Operation.—We found the peritoneum much thickened. The great distension was due to ascitic fluid. Attached to the fundus by a very small pedicle was a myomatous nodule 16 cm. long (Fig. 1). Plunging into the upper or free surface of this nodule were a large number of blood vessels, each about 3 or 4 mm. in diameter, tortuous and closely resembling angle worms. On tracing them upward they proved to be the enlarged omental vessels. The omentum as such was recognized as a fringe not more than 5 mm. long, projecting from the lower edge of the transverse colon. The altered omental vessels were exceedingly friable and ruptured on the slightest manipulation. The parasitic myoma derived part of its blood supply from the bladder, to which it had become intimately attached. After tying off the blood supply of the myoma, this growth was removed and the patient made a rapid recovery.

In this case I had to rely entirely on the physical signs, as the patient was of unsound mind, and up to the day of operation no history could be obtained. The facial expression and the abdominal signs tallied in every particular with those referable to an ovarian cyst, and without the clinical history a correct diagnosis was impossible. The tympany in the flanks is, on first thought, difficult of explanation, but when we remember that this myoma with the omental vessels attached stretched almost the entire length of the abdomen, it is readily seen that the small intestines were held back and at the same time forced out laterally. Under any circumstance there would have been dullness over the entire anterior abdomen, as the intestines, even if not held back by the tumor and omental vessels, could not have reached the surface, their mesentery not being long enough. I know of no instance in the literature where such a large quantity of ascitic fluid was associated with a myoma. The condition in this case was analogous to that found where a fibroma of the ovary exists. In the latter we have a solid tumor so moving that there is often partial torsion of the vessels bringing about the outflow of ascitic fluid. In our case the myoma rolled around so much that the omental vessels were partially twisted. This was undoubtedly the case, as is shown by the fact that there has been no further appearance of the ascitic fluid since removal of the myoma. Had this patient been in the possession of her mental faculties the diagnosis would have been fairly certain, as the family physician told me at the time of operation that he had first noticed a hard abdominal tumor attached to the uterus and that the ascites had developed subsequently.

Schwarzenbach[1] reports a most interesting case. The patient was 30 years old and the mother of six children. In 1896 she had a pelvic hematocele, with pronounced symptoms of internal hemorrhage. In 1897 a subperitoneal myoma the size of a child's head was detected. In 1899 she gave birth to a child, and in 1901 an exploratory abdominal section was made. Numerous arteries and veins springing in the vicinity of the stomach lay perfectly free in the abdomen, and passing downward spread out on the surface of the subperitoneal uterine tumor. Considerable ascitic fluid was present in the abdomen. The abdomen was closed, as the growth was thought to be malignant. The patient improved, and in 1902 the abdomen was again opened. The omentum, which at the first operation showed marked atrophy, had now entirely disappeared. The patient was two months

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1. H. Schwarzenbach: Eigenthümliche Entartung des an einem Uterusmyom adhärenten Netzes, Beiträge zur Geburtshilfe und Gyn. Rudolf Chrobak. Aus Anlass seines sechzigsten Geburtstages. Gewidmet von seinen Schülern und Freunden, vol. i, p. 226.

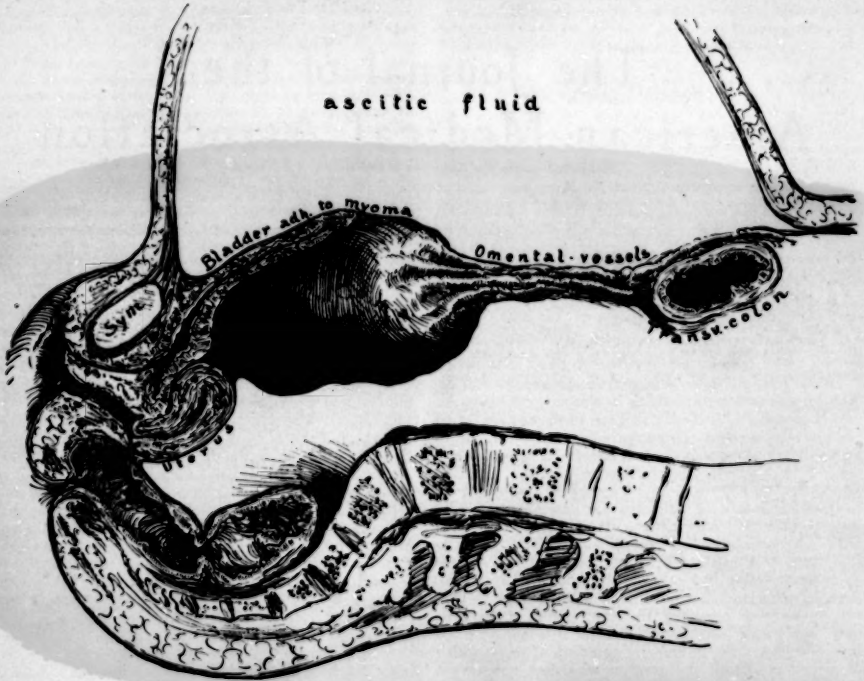

FIG. 1.—A PARTIALLY PARASITIC UTERINE MYOMA ASSOCIATED WITH 51 LITRES OF ASCITIC FLUID.

Attached to the fundus by a narrow pedicle is a subperitoneal myoma. Plunging into the top of the myoma are the omental vessels. The omental fat has almost entirely disappeared. The myoma is intimately blended with the posterior surface of the bladder. The abdomen is markedly distended with ascitic fluid. The small intestines were effectually held back by the tumor and omental vessels.

pregnant. The large vessels were tied and the myoma was removed. The pregnancy was in no way disturbed. All trace of the pelvic hematocele had disappeared except for the presence of some pelvic adhesions.

It seems quite probable that the hematocele in this case was due to rupture of one of the omental vessels instead of to the rupture of a tubal pregnancy. This case has many points in common with ours.

CASE 2.—Diagnosis: Myomatous uterus. Actual condition: Adenocarcinoma of the body of the uterus, with secondary subperitoneal nodules. (Fig. 2.)

Patient.—Mrs. C., aged 59, was admitted to the Johns Hopkins Hospital, April 22, 1903. She had had three children. Menses stopped at 49. Four years ago uterine hemorrhages commenced and lasted several months. Since then they have been irregular. There is a continual leucorrheal discharge with some odor.

Examination and Diagnosis.—On vaginal examination we found the uterus about twice the natural size. It was quite nodular. As the patient was in good condition and had a nodular uterus which in general contour corresponded closely with a myomatous uterus (Fig. 2), we made a diagnosis of myoma, especially as the hemorrhages could readily be accounted for by the presence of myomata and since the vaginal discharge was but slightly offensive.

FIG. 2.—ADENOCARCINOMA OF THE BODY OF THE UTERUS WITH SUBPERITONEAL NODULES.

The specimen is viewed from the front. The right round ligament is drawn upward by a cancerous nodule situated at its junction with the uterus. Scattered over the surface of the uterus are cancerous nodules varying from a pea to a marble in size. The insertion of the left round ligament is at a much lower level than is that of the right round ligament. The general contour of the enlarged and nodular uterus closely resembles that of a myomatous organ.

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Operation.—At operation we found the uterus as I have described, but the nodules that were supposedly myomata were at points at which the cancer of the body of the uterus had extended to the surface. Here they formed raised nodules beneath the surface and at several places had become attached to the intestines. Complete hysterectomy was performed. The patient made a temporary recovery, but it is doubtful if the entire growth was removed.

In this case mere curettage, even without a microscopic examination, would have been sufficient to establish the diagnosis. But in cases where myoma is diagnosed and hysterectomy advised, we hardly deem it necessary or wise to curette.

CASE 3.—Diagnosis: Subperitoneal and intraligamentary myomata. Actual condition: Hydrosalpinx, adenocarcinoma of the right ovary, involvement of the small bowel and marked extension to the bladder.

Hysterectomy, partial removal of the cancerous growth, resection of a portion of the small bowel; temporary recovery.

History.—On Jan. 25, 1904, I saw the patient, who was 48 years of age. Her menstrual periods continued regularly until she was 44. Since then the flow has appeared every three or four months, and there has been a slight vaginal discharge. Two years ago she passed a calculus, apparently from the left kidney.

Examination.—On vaginal examination I found the uterus half as large again as normal. Projecting from the fundus on the right side, and very prominent, was what appeared to be a subperitoneal myoma about 5 cm. in diameter. The right side of the pelvis was filled by a growth which apparently sprang from the uterus and filled the broad ligament. This growth in contour and consistence resembled a myoma.

Operation.—On opening the abdomen (February 2) I found the uterus moderately enlarged. The supposed subperitoneal myoma proved to be a very tense hydrosalpinx which was kinked forward, thus accounting for its prominence. The growth on the right side was a carcinoma of the ovary. It filled the broad ligament and had infiltrated the bladder wall. Attached to the cancerous mass was the omentum and a loop of small gut. As the gut at this point was markedly constricted, I attempted by gentle dissection to release it, but the bowel was so infiltrated by cancer that it commenced to tear and resection of a portion was imperative. It was decided that the only hope of even temporary relief would be hysterectomy with as thorough removal of the growth as possible. This was done, but a raw, green, offensive, cancerous area, fully 6 cm. in diameter, remained attached to the surface of the bladder. Three inches of the bowel were then resected and the ends united by means of the Connell suture, supplemented by the Lembert suture. The anastomosed bowel was then placed among healthy loops of gut as far removed from the necrotic area as feasible. The pelvis was drained through the vagina and abdomen. The patient recovered promptly, but naturally still has a small abdominal sinus. We have employed a retention catheter continuously, as even its temporary removal was

FIG. 3.—TUMOR OF THE SIGMOID FLEXURE DUE TO RUPTURE OF DIVERTICULA INTO THE SURROUNDING ADIPOSE TISSUE. SMALL PELVIC ABSCESS.

The lumen of the bowel below the promontory of the sacrum is considerably narrowed. At this point is a definite tumor made up of adipose tissue. Projecting into it are two diverticula, one seen in longitudinal, the other in cross section. At the point indicated by the three arrows the diverticulum has given way and its contents have percolated through fat. This fat on histological examination showed evidence of acute and chronic inflammation, thus accounting for the denseness of the tumor. Between the tumor and the pelvic floor is a small abscess.

promptly followed by the signs of ascending renal infection. The patient is now[2] in fairly good condition and has been entirely relieved of abdominal distension and cramps, to which she was subjected for some time prior to the operation.

In this case the clearly outlined subperitoneal nodule associated with the growth on the right side gave us a clinical picture very characteristic of multiple myoma, and this diagnosis was further strengthened by the healthy appearance of the patient. Some may doubt the wisdom of attempting any operative procedure in these cases, but in the liberation of the constricted and friable intestinal loop the bowel was opened, and then the more radical procedure seemed to offer the best chance of temporarily relieving the patient. In this case an absolute diagnosis would have been impossible without opening the abdomen.

CASE 4.—*Diagnosis*: Pelvic abscess, with retroverted myomatous uterus. *Actual condition*: Rectal diverticula, with rupture into the surrounding rectal fat, producing a definite tumor. Small abscess between the tumor and the pelvic floor. (Fig. 3.)

History.—This patient was seen early in February, 1904. She was 60 years of age. For some time she had experienced slight difficulty in defecation, and for a few days had been running a temperature varying from 100 to 103° F.

Examination.—On vaginal examination, I found the uterus somewhat enlarged. Posterior to it, and apparently continuous with it, was a globular mass. This was very hard and resembled a myoma in contour. There was, however, a hard ridge over its lower portion, as is so often noted where pelvic abscess exists.

Operation.—On February 13 I made a small incision in the vaginal vault just posterior to the cervix, and after peeling back the mucosa entered Douglas' pouch with a pair of blunt artery forceps. A very small amount of pus and a few flakes of fibrin escaped, but the mass was in no way diminished in size. Realizing the presence of an unusual condition, I packed the opening in the vault and immediately entered the abdomen from above. Filling Douglas' sac almost completely was a tumor mass evidently springing from the sigmoid flexure, which had rotated 90° and had become firmly embedded in the pelvis. It closely resembled a rectal cancer. On careful manipulation it was brought out of the pelvis, and on inspection no lymph glands were demonstrable. The diseased segment of gut was removed and an end-to-end anastomosis done with Connell and Lembert sutures, the former being employed at the mesenteric junction and for about two-thirds the circumference of the gut. A portion of the descending colon was brought up into a small incision in the left inguinal region and made fast, so that if occasion demanded it could be opened with a thermocautery at a moment's notice. Drains were then introduced into the vagina and also through the lower angle of the abdominal incision. At the end of the fourth day there was considerable abdominal distension and the patient was very weak. We accordingly opened the descending colon at its point of attachment to the abdominal wall and at the same time forced the patient's nourishment. She promptly recovered. The small fistulous opening was a few weeks later readily closed under local anesthesia, and the patient is now perfectly well.

Examination of Tumor.—On laying the tumor open we found that there were two rectal diverticula passing out into the adipose tissues, and communicating with the lumen of the gut by openings not more than 1 mm. in diameter (Fig. 3). The larger diverticulum was 1 cm. in diameter and filled with a fecal mass. The floor of this diverticulum had given way, and the surrounding fat was everywhere infiltrated by inflammatory products. The excessive hardness of the tumor was due to the fat being in many places replaced by recent connective tissue. The small abscess between the tumor and the pelvic floor was due to the extension of the inflammatory process to the peritoneum of Douglas' pouch. The diverticula were lined by atrophic mucosa. A rectal examination of this case would have yielded little beyond some narrowing of the lumen of the bowel, which is often present in cases of pelvic abscess. In this case cancer of the bowel might very readily have been diagnosed and a colostomy made.

It will be readily admitted that the preceding cases are unusual ones, and that a positive diagnosis before operation would have been extremely difficult. The possibility of such conditions should always be borne in mind when we are dealing with cases that at first sight seem so easy of diagnosis. While it is always very gratifying to be able to make an absolute diagnosis, yet in many cases it is only possible for us to give a tentative opinion before operation. In this group of cases, notwithstanding our inability to solve the riddle prior to operation, the outcome was as satisfactory as we could have anticipated under the existing circumstances.

2. Aug. 22, 1904.

ESOPHAGOSCOPY AND BRONCHOSCOPY.

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CHICAGO.

Esophagoscopy has been practiced so long and is so familiar to some general surgeons as well as to laryngologists, that its history would not be of great interest. However, its great value in some cases calls for at least a word, and I wish to present the history of one very interesting case in which it enabled me to make a successful operation where other methods failed.

Bronchoscopy is of more recent origin and must become of great interest to laryngologists because of the aid that it affords in removing foreign bodies from the air passages, especially in cases that can not be relieved by tracheotomy alone, and also in many other cases where the resulting scar and the dangers of pneumonia render the latter operation objectionable.

The ease with which foreign bodies can usually be removed from the trachea and often from a main bronchus after tracheotomy, makes this latter operation preferable in most cases, but when the diagnosis is in doubt or when the foreign body has passed into one of the divisions of a bronchus, bronchoscopy affords a means not only of diagnosis, but of successful operation, infinitely superior to transthoracic bronchotomy.

We are greatly indebted to Prof. Gustav Killian of Freiburg, Germany, who first demonstrated the practicability of bronchoscopy, and whose paper, read to the British Medical Association August, 1902,[1] first brought us to a realization of the capabilities of esophagoscopy and bronchoscopy.

Bougies may pass foreign bodies in the esophagus without touching them, and sometimes the radiograph will not show objects because of their character or because they are hidden by the shadow of the vertebræ. On this account Killian says "direct esophagoscopy is the only absolutely reliable method."

In a recent article,[2] Eicken states that Desormeaux first perfected the principle in the urethroscope, 1853. Killian states in his article that Kussmaul attempted esophagoscopy in 1868, but that the operation has been developed and perfected by von Mikulicz, von Hacker, Rosenheim and others, and that many foreign bodies have been removed by this method. However, "if the foreign body is large, has sharp edges, points or hooks, as, for instance, dental plates, all attempts at extraction

1. Journal of Laryngology, Rhinology and Otology, Sept., 1902.
2. Archives of Laryngology and Rhinology.

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are dangerous; these may lead to fatal injuries of the gullet. In such cases esophagotomy is indicated, if the foreign body is situated no deeper than from 24 to 26 centimeters from the upper incisors (von Hacker); if deeper, gastrotomy or posterior mediastinotomy (Enderlin) is called for. An exception may be made in the case of vulcanite plates without large metallic parts." Killian also specially recommends direct laryngoscopy through a straight tube for detecting and removing foreign bodies from the larynx in children. He says: "In children insurmountable difficulties often arise (to ordinary laryngoscopy). In these cases direct laryngoscopy (Kirstein's autoscopy) can always be successfully employed, especially after administration of an anesthetic, the patient's head being in a dependent position. Of course, if there is much dyspnea a preliminary tracheotomy must be performed." He says that a similar procedure is even more valuable for foreign bodies in the trachea.

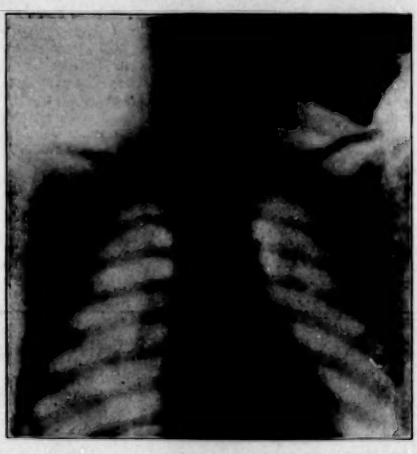

Fig. 1.—Case 1. Radiograph of fleur-de-lis chatelaine pin in esophagus, just above the level of the interclavicular notch. The pin has been outlined in black for the sake of clearness.

When foreign bodies have passed deeply beyond the main bronchi, bronchoscopy renders the greatest possible service, for the reason that we may thus locate and accurately grasp substances heretofore beyond our reach. Killian says: "We may, without fear, press the bronchi, which are highly elastic tubes embedded in soft tissue, into the median line, and bring trachea, larger bronchus and branch into one straight line."

I procured a set of Killian's instruments soon after reading his article, and have attempted their use for diagnosis in two esophageal cases for removal of foreign bodies in the esophagus in two cases, for removal of foreign bodies from the air passages in two cases. In the cases for diagnosis the first was satisfactory, but in the next, where a pin had been swallowed and had apparently passed into the stomach, the profuse secretions prevented a satisfactory examination. Of the next two cases, in one I made three or four efforts to introduce the esophagoscope, but had to quickly abandon it because the child could not tolerate chloroform; the other was successful, and in one of the last two I did not use the instrument at all because the electric light failed before the operation was begun, and I then removed the foreign body by tracheotomy; but in two most difficult cases, one of esophagoscopy and one of bronchoscopy, the operation proved entirely successful, where the ordinary surgical procedures completely failed. In the esophagoscopy I used Kirstein's lamp as a means of illumination as recommended by Killian, but in the bronchoscopy, although I tried this lamp, I obtained much more satisfactory illumination with a lamp placed on a longer carrier which I had made for the purpose.

In the article published by Killian, September, 1902, he states that bronchoscopy had up to that time been attempted in 20 cases, in 5 of which it proved a failure. Eleven of these cases were his own. He refers also to cases by Coolidge of Boston, von Schroetter, Wild of Zurich, J. A. Killian of Worms, Hajek, Eicken of Bruns, Neumeyer, Spiers, Thost and Spiess. Since the publication of Killian's article other cases have been reported, and the article just published by Eicken[3] brings the record down to the present time with the

Fig. 2.—Kirstein's lamp.

exception of two cases of lower bronchoscopy, one by A. Schwyzer of St. Paul, and one by Bodmer, and my own case of upper bronchoscopy, a preliminary report of which was recently published.[4] Eicken mentions the names of several others who have used bronchoscopy for diagnosis or more or less successful operations. Some of the cases were not published. In this list I find the names of Pienazek, Heryng, Scheeh, Schmidt of Odessa, Gust and Brunner, making all told 34 cases, of which 19 resulted in successful removal of the foreign body, 10 by upper and 9 by lower bronchoscopy. Eicken's article is very complete, and should be read by every one interested in the subject. In my search it is possible that some cases have been considered twice, but there appears all told to have been up to May of this year 14 successful cases of removal by lower bronchoscopy and 11 cases by upper bronchoscopy. Of the lower bronchoscopy, G. Killian has done 3, Coolidge 2 and Eicken, Neumeyer, Hajek, Spiess, Harrington, Wild and Lermoyez-Guisez, Bod-

3. Archives of Laryngology and Rhinology.
4. THE JOURNAL A. M. A.

mer and Schwyzer each one. Of the upper bronchoscopy Killian has done 5, H. von Schroetter 2, J. A. Killian 2, and Eicken and myself each one.

Killian and most of the other operators use the Kirstein lamp as the source of illumination. In my operation I had the Kirstein lamp; indeed, used it for a few minutes at the beginning of the operation, but in

Fig. 3.—Handle for Killian's tube forceps.

this particular case I obtained better results with the small lamp (Fig. 7) introduced to near the distal end of the bronchoscope. This was not at all in the way in searching for the foreign body, and it gave me no inconvenience in swabbing out the secretions, for an assistant removed it instantly and reintroduced it whenever I wished. One great advantage of this source of illumination is that the operation can be done in a light room, whereas with the Kirstein lamp it must be in a darkened room.

It is a great advantage to the anesthetist to have the room light in order to watch the patient, and it is much more convenient for the operator in handling his various instruments. The small light in the bronchoscope enables the operator to move his head at will without interfering with the illumination, and it enabled me to show the branches of the bronchi and the pin in position to all the physicians in the room. I did not find the lamp carrier any obstruction to the introduction of instruments, for although it took a little room, this interference was more than compensated for by the better illumination. In examining branches of the bronchi too small for passage of the bronchoscope, one of these tiny lamps on a longer carrier might be passed directly into the bronchus. From my limited experience and from numerous experiments I have made with the bronchoscope, it appears to me that even with the Kirstein lamp which leaves the whole lumen of the bronchoscope available for instrumentation, it will rarely be possible to grasp the object while actually under inspection, for the head must be moved to allow introduction of instruments and the instruments themselves cut off a large part of the illuminating rays. These, I think, generally compel the operator to locate the object, and then introduce his forceps in the right position and to the proper depth and close them in the dark. Fortunately, this can be done with almost as much accuracy as under actual inspection. In removing the fleur-de-lis chatelaine pin from the esophagus, I tried for a long time to catch it under direct inspection, but the necessity of moving my head to introduce the forceps and the cutting off of the rays of light by the forceps themselves, appeared to make this impossible, so that I at length removed the esophagoscope and attempted to reach the foreign body with various esophageal forceps, but owing to the edema of the esophagus its wall appeared to fold over the foreign body, and I could not even feel it with an instrument. I then reintroduced the esophagoscope, and having accurately located the body at the end of the tube passed in the forceps to the right depth with the blades in the proper position and without seeing the body at the time, caught it easily. In removing the pin from the bronchus with the small lamp down within a centimeter of the end of the bronchoscope, I was at once able to see the pin at the instant I caught it; but this certainly can not be necessary in most cases if the operator is thoroughly familiar with the location of the body and the relations of the forceps. In the case of esophagoscopy in which the secretions were so profuse, I used a local anesthetic only. I obtained a good view of the upper part of the esophagus, but not of the lower. I then resorted to a horse-hair extraction, which seemed to demonstrate that the pin was not in the esophagus.

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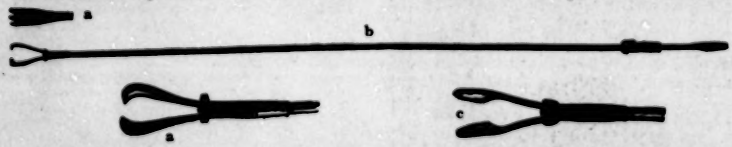

Fig. 3, continued—Killian's tube forceps. a. Sharp tooth, natural size. b. Stem 45 cm. in length. c. Safe forceps, natural size.

In the bronchoscopy the parts were also anesthetized by cocain, and bleeding and probably secretion were somewhat checked by suprarenalin. In the bronchoscopy

Fig. 4.—Case 2. Radiograph of pin in right bronchus with the head directed downward and outward. The pin has been outlined in black for the sake of clearness.

the operation was much facilitated by the vise-like grip with which Dr. Corwin held the patient's head in any position I desired; and I think also by the sixtieth of

a grain of atropin which I had given hypodermically before the anesthetic was begun for the purpose of checking secretion. In the latter operation the patient did not breathe well for a time, but after the bronchoscope had passed into the bronchus there was no difficulty, although two or three times she appeared not to be breathing at all when really she was respiring easily. At these times the advantage of a lighted room were great, for otherwise the operation would have been suspended. The employment of a chloroform inhaler that permitted us to introduce the vapor through a small tube was also a great convenience.

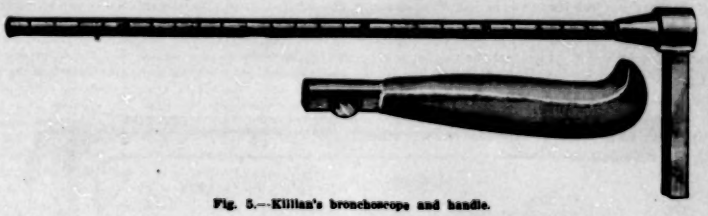

Fig. 5.—Killian's bronchoscope and handle.

During the search for the pin, although I had on glasses, I was much annoyed by the vapor of chloroform being blown into my eye and causing much smarting. This I have since avoided by having an assistant hold a pane of glass between the eye and the end of the bronchoscope; this has also been very serviceable in preventing the patient from coughing into the operator's eye. In both of these operations it was impossible to extract the foreign body through the tube, therefore,

Fig. 6.—Brophy' inhaler.

after it had been seized and drawn firmly against the end of the instrument, it was held there and both were removed together. In both of these cases the radiograph was of signal service in furnishing information as to the location and position of the foreign body. In view of the interference in respiration by the unaffected lung, when the bronchoscope is passed into one of the main bronchi, Killian had a large oval opening made in some of his bronchoscopes some distance above the end. To meet this indication I have had a number of holes, each 2x4 mm., made in my bronchoscope from 5 to 10 cm. above its distal end. I can see no objection to these, and I find that they overcome the difficulty fully without in any way interfering with the use of the instrument.

ESOPHAGOSCOPY.

Case 1.—April 11, 1903, I received notice from the Presbyterian Hospital that a child, H. C., had come in who had a foreign body in the esophagus.

History.—I had the child brought to my office and then I learned from the mother that a radiograph had been taken at the hospital which showed the foreign body located at the narrow part of the esophagus just above the level of the interclavicular notch, but she did not have the picture. The little girl was 2½ years of age. Six days previously she had swallowed a fleur-de-lis chatelaine pin and had suffered severe nausea for several hours, and since that time had been unable to swallow solid foods.

Examination.—I found her pale and weak, but fairly well nourished. With the fluoroscope I searched some time before I could see the shadow of the foreign body, and but for the positive statement that the radiogram showed it I should have believed there was nothing there, but finally I made out the very faint but distinct outlines, as shown in the radiograph. (Fig. 1.)

Operation.—I gave the patient chloroform and then, darkening the room, introduced Killian's esophagoscope, illuminated by Kirstein's lamp. (Fig. 2.) The secretions in the esophagus were quite abundant, but I swabbed them out with absorbent cotton on Killian's cotton carriers and soon discovered a small part of the pin in the folds of the collapsed esophagus at the end of the tube. I made many efforts to seize it with Killian's tube forceps (Fig 3) under direct inspection, but this proved to be impossible, as I could not introduce the forceps without moving my head, and when they were in, on account of their length, I could not get my head near enough to the esophagoscope to throw in sufficient light to enable me to see the object. I tried to overcome this difficulty by springing the forceps, and finally by bending them, but did not succeed. After about half an hour spent in these futile efforts, I removed the esophagoscope and tried to catch the foreign body with the ordinary long bent, and also tube forceps, but I could not even feel it with either of these. I then re-introduced the esophagoscope, and, having exposed a part of the pin, introduced the forceps with the blades in the right position to grasp it. I pushed them down gently about a centimeter below the end of the tube, and on closing them found that I had the pin firmly in my grasp. It was much too large to be extracted through the tube, so I drew them both out together.

Result.—Whatever injury may have resulted to the esophagus from this procedure was speedily recovered from, and the patient was discharged cured in 4 or 5 days.

BRONCHOSCOPY—REMOVAL OF PIN FROM LUNG.

Case 2.—Miss B. E., aged 17, came under my care March 23, 1904.

History.—She had drawn a large glass-headed pin into the air passages eleven months previously. She had attacks of cough for 3 days after the accident, but for the following month

the symptoms were so slight that her friends could not believe that she had inhaled the pin. Afterward the cough gradually grew worse, so that in six months she had to leave school and finally became so bad that, as she said, she was like a person in the "last stages of consumption." At times she could feel the pin move about in the air passages, and one time it was coughed up to the larynx and caused a spasm that nearly proved fatal. Her sensations had always been referred to the right side or to the center of the sternum. She was short of breath, particularly when lying down at night. She at times expectorated a great deal for 4 to 5 hours at a time, and frequently the sputum contained some blood. The *x*-ray was used three times, but nothing could be discovered. In the latter part of January she had been sick in bed with considerable fever and after about two weeks (February 6) Dr. Allison of her home town had opened the trachea and sought for the pin, but, being unable to find it, had closed the wound, which healed promptly. The patient stated that an abscess had been found at the time of the operation and that there was considerable expectoration of pus. Subsequently she had very little cough until she took a cold about two weeks later.

Examination.—At the time I first saw the patient the scar from the tracheotomy caused a raised welt which was very sensitive to the touch and she was having more or less pain, severe on coughing, the principal seat of which was beneath the third right costal cartilage; the pain extended from the second to the fourth ribs and from the middle of the sternum about 9 c.m. to the right. The patient was large and tall for her age. I found her fairly well nourished. She usually weighed 120 pounds, although she had lost considerable flesh; the pulse was 90, temperature normal and appetite and digestion good. She was coughing a good deal and expectorating from three to six ounces of muco-pus daily. The nares and throat were negative, but at the site of the tracheotomy there was a granulation tumor in the trachea about 7 m.m. in diameter.

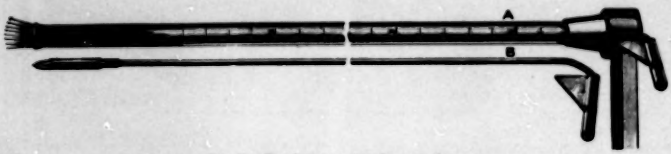

Fig. 7.—The lamp on the long carrier.

vapor was administered through the bronchoscope. The patient was drawn up so that her head hung over the end of the table, where it was held by Dr. Corwin. I was seated directly back of her head. With a modified Kirstein spatula the tongue was pressed forward and the bronchoscope introduced; but first I got it into the esophagus. After passing the narrow portion of the esophagus where the wall of the gullet folds down closely over the end of the bronchoscope, the esophagus was more or less open, showing an open tube for several centimeters below the end of the instrument. This was at first confusing. The walls of the esophagus under these conditions expand and contract with respiration, but they do not entirely close. I withdrew the bronchoscope and with my finger directed it into the larynx as I would an intubation tube, a plan that is easier for me than under inspection. When the patient was nearly under the chloroform, I sprayed into the larynx a moderate quantity of the following solution, which was also used later several times to anesthetize the bronchi and thus permit of a smaller amount of chloroform. Three or four times during the operation the patient breathed poorly.

B.	Suprarenalin	gr. 1/8	008
	Atropin	gr. 1/10	006
	Strophanthin	gr. 1/5	01
	Ol. caryophili	m. iii	18
	Acidi carbolici	gr. x	6
	Cocain hydrochloratis	gr. xlviii	3 12
	Aq. dest. q. s. ad	3i	30

Turning the patient's head to the left I readily passed the bronchoscope into the right main bronchus and examined its various branches, removing the secretions from time to time with a pledget of cotton carried in by a long cotton carrier. At the beginning of the operation I used a Kirstein lamp, but later substituted the small lamp of which I have already spoken. (Fig. 7.) The light from the latter at first caused confusing reflections because of its brightness and I could not regulate it accurately by the battery, as could have been done by a rheostat, but the lamp at length became partly dimmed by a thin coating of blood, which was a material benefit. Although I could easily see all the main bronchus and its branches running downward and outward I could not find the pin, though I searched for it a long time. At length I took a blunt hooklet furnished with the set (Fig. 8-a) and after sweeping it about the various bronchi for several minutes finally brought a part of the pin across the end of the instrument. I was unable to see either the head or the point of the pin, and I concluded that the head must have passed backward into a bronchus, the opening of which was not visible. Feeling confident that I would not lose the pin, I demonstrated it to Professor Senn and various other physicians who were present, and then seized it with Killian's tube forceps (Fig. 5) and by manipulating the forceps and bronchoscope tried to bring the

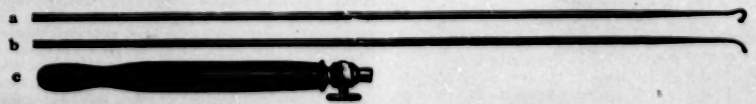

Fig. 8.—Hooklets. a. For removal of foreign bodies, but not safe for introduction into small bronchi because of danger of becoming caught in some lateral branch. b. For searching safely in bronchi for foreign bodies. The hooklets are nearly natural size, but the stems are 45 cm. in length. c. Removable handle, half size.

I could not see the lower half of the trachea. There were a few feeble rales and slight feebleness of the respiratory murmur at the inner part of the lower lobe of the right lung. Otherwise physical signs were normal. A radiograph taken at the hospital showed the pin (Fig. 4) located on a line between the second and third ribs in front and the fifth and sixth interspace behind and from 3 to 4.5 cm. to the right of the median line, with the head directed downward and outward.

Operation.—At 5:30 p. m., March 24, assisted by Dr. George H. Kennett, who gave the chloroform, and by Drs. A. M. Corwin, O. T. Freer, N. P. Colwell and E. L. Kenyon, I operated with Killian's bronchoscope 35 c.m. in length and 9 m.m. in diameter. (Fig. 5.) I first gave the patient gr. 1-60 of atropin hypodermically to check secretion, then administered chloroform through a Brophy inhaler (Fig. 6) by which the vapor is blown through a small tube. During the operation the

point of the pin into the tube. I let go of the pin and seized it again several times in this effort, but found it impossible; at length, concluding that the point was sticking into the wall of the bronchus, I finally determined that it would be better to scratch the air tubes all the way up than to take farther risks of losing the pin again, therefore I seized it firmly and drew the pin and bronchoscope out together. I found that the pin had been grasped near the head and it came out bent. In grasping the pin I did not actually see the blades close on it only once, for the forceps when opened shut off the field of vision. By measuring off the length of the bronchoscope on the forceps and marking this with a rubber strap about the forceps I could readily tell how far to introduce them before closing the blades and by a knowledge of the position of the pin the blades could be turned in the proper direction. The operation took, all told, an hour and a half.

Result.—At 9 p. m. the pulse was 90, at 3 next morning 78, and at 8 a. m. the pulse, temperature and respiration were normal. There was no temperature afterward. The tongue where it had been hurt by the tongue forceps, was sore and the bronchi were sore, but this had all disappeared in a couple of days. Four days after the operation the patient went home feeling well, excepting a little cough, which soon disappeared. I examined the trachea just before she went home and found that the granuloma had been rubbed off during the operation. On May 12 she wrote me that she was perfectly well, had gained several pounds, weighed 122 pounds and was in better health than before the accident.

A NEW MATERIAL FOR SUTURES AND LIGATURES.

TENDONS FROM THE LEG OF THE CRANE.

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There is still room in the armamentarium of the surgeon for a reliable, slowly absorbable suture and ligature material. I have been recently investigating a material from a very curious source which I believe to be entirely new. Dr. George P. Johnson of Cheyenne called my attention to the long and strong tendons in the legs of the bird commonly known throughout the United States as the blue crane (Fig. 1). He had used this material with excellent results as a suture for the aponeurosis in a case of hernia, the suture giving no trouble and apparently being absorbed in time. I obtained from him a number of these tendons and immediately began a series of experiments to test their value as sutures and ligatures. These experiments comprised tests of the breaking strain of the tendons wet and dry, of the possibility of rendering them aseptic, of the effect of sterilizing processes and finally, tests to determine, if possible, the rate of their absorption in the body. As a result of these studies I have come to the conclusion that we have here not only a valuable suture and ligature material, but one easily obtained in all parts of the world and easily prepared for use. It is not only sufficiently strong for all practical purposes, but is absorbed very slowly indeed in the tissues and therefore seems peculiarly adapted for the cases in which a reliable and slowly absorbed suture is required. It certainly answers all of the requirements for which kangaroo tendon has hitherto been used and, in many ways, is superior to it.

As favorable results were obtained, these studies were not limited to the blue crane, but included two others, the sand hill crane and a rather more rare and larger species known as the whooping crane, one specimen of which I was fortunate enough to secure. The tendons used are the extensor and flexor tendons which run from the thighs down to the toes. Usually from 6 to 8 useful tendons can be obtained from each leg or from 12 to 16 from each bird. It seems likely that the tendons from all of the larger grallatorial birds will be found equally useful. This would mean a wide source of supply, since these birds are distributed all over the world in two large families, the *Ardeidæ* and the *Gruidæ*, the herons and the cranes.

Probably the commonest bird of this type and the one most generally distributed in the United States is the bird commonly, though improperly, known as the blue crane. As a matter of fact it is not a crane at all but a heron, and therefore should be called the blue heron (*Ardea herodias*). It attains an average height of 3 1-3 to 4 feet, with a spread of wing of about 6 feet. Nearly half of its height is in the slender legs. Like all the rest of the family it is aquatic in its habits, feeds on fish and builds its nest in trees near swamps and streams. The leg tendons from this bird

Fig. 1.—Blue Heron (*Ardea herodias*).

will average 11 inches in length and, in large specimens, there may be quite 14 inches of tendon up to the tendinous expansions in the muscles of the thigh. When dry they are flat, glistening bands resembling rough silk worm gut and are about 1-16 to 1/8 of an inch wide. There is a still larger species of this family of birds found in the southeastern United States and popularly known as the great white heron of Florida, *Ardea occidentalis* (Fig. 2). I have not been able to obtain a specimen of this bird but its leg tendons should be considerably longer than those of *Ardea herodias*. The family *Ardeidæ* is abundantly represented in Europe, Asia and in Africa, in which continent the largest known species is found, *Ardea goliath*.

The chief representatives of the second group, the *Gruidæ*, in the United States are the common crane generally known as the sand hill crane, *Grus canadensis*, and the stately whooping crane, *Grus americana*. The sand hill crane is fairly common, the whooping crane, more rare. There are about 17 species of this

family distributed over all the great zoo-geographical regions excepting, perhaps, the neo-tropical, in which they are not abundant. The common species of these two families are so well known in this country that a more extended description is unnecessary. The leg tendons of the sand hill crane will average 14 inches in length. The tendons from the one specimen of the whooping crane which I had varied from 14 to 16 inches in length.

A large number of the leg tendons were tested for their tensile strength in the following manner. The tendons selected first for trial were leg tendons of the blue heron, *Ardea herodias*, that had been roughly dried without any attempt at preservation—in other words, the tendons were used just as they came out of the legs of the birds after being dried in the sun (Fig. 3). A number were made pliable by immersion in water for a few minutes. The average breaking strain was found to be 25 pounds. Then the wet tendons were tied in hard knots; the breaking strain at the knot was found to vary from 24 to 27½ pounds.

Fig. 2.—Great White Heron of Florida (*Ardea occidentalis*).

Perfectly dry tendons without preservation or preparation of any kind were then tested. A hard square knot tied in the continuity of the material broke at 24 pounds. Another knot under the same conditions sustained a weight of 30 pounds without breaking. Tendons immersed in the iodin solution for the sterilization of cat-gut according to the Claudius method, were then tried. After being immersed in this solution for 21 days the breaking strain of a number of tendons averaged 29 pounds. It may be that these were peculiarly strong tendons, but they seemed to be of the same size and stoutness as the others employed and while it may not be true that the tendons are actually stronger after being immersed in the iodin solution, it seems certain at least, that this process of sterilization does not weaken them. These results with the tendons of *Ardea herodias* are shown graphically in the appended illustration (Fig. 4.).

The tendons of the sand hill crane, *Grus canadensis* (Fig. 5), tested in the same manner, proved to be, on an average, ten pounds stronger than the tendons of the blue heron. Separate tendons of this variety sustained a pull of 35 pounds without breaking when wet; with an average tensile strength of 33 pounds in ten specimens. The average strength of the unprepared and unpreserved dry tendons was 31 pounds. When tied in square knots either wet or dry these tendons behaved as the others; that is to say, even a hard dry knot showed no appreciable weakness from cracking or splitting of the fibers and sustained a pull as strong as the untied tendon.

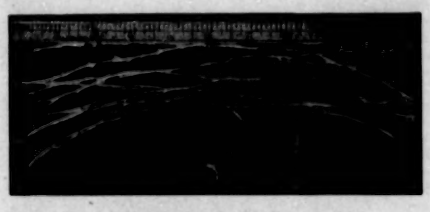

Fig. 3.—Tendons of *Ardea herodias*, sun dried.

Immersion in iodin solution showed the same results as with the tendons of the heron, an average increase of strength of 2½ pounds. One knotted piece sustained a weight of 37 pounds without breaking. From the specimen of the whooping crane (*Grus americana*), I obtained a number of tendons quite 15 inches in length, of extraordinary strength. Much stronger than the tendons of the sand hill crane and as strong as the heaviest kangaroo tendon. One of these tendons sustained a weight of 50 pounds without breaking.

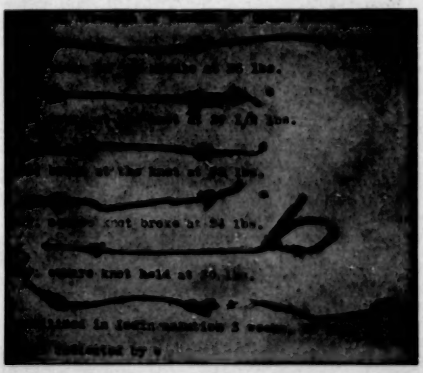

Fig. 4.—Showing tensile strength of tendons of *Ardea herodias*.

Only one process of sterilization was tried; the Claudius method for sterilizing cat-gut. Heron and crane tendons immersed in this solution take a deep mahogany or blackish-brown color. The solution seemed to have no deleterious effect whatever. They were smooth, if anything more pliable than in the fresh state and in appearance very much resembled ordinary heavy cat-gut or kangaroo tendon submitted to the same process. As has already been shown the tests applied to determine the strength of the iodized tendons

showed not only no diminution but an apparent increase of strength. Inoculations were made from the tendons treated in this manner and it was found that the tubes remained sterile when the tendons had been in the solution three days or longer. The method of making the inoculations was to take a tendon, cut it into small bits with sterile scissors and wash it thoroughly in absolute alcohol in order to remove as much as possible of the free iodin remaining in the tissue. The free iodin being an excellent antiseptic might hold a growth in check, although active germs might be present in the mass. To ensure the removal of the iodin, the tendons were well teased apart during the alcohol washing. Following this they were thoroughly rinsed in a large quantity of sterile water and directly planted on gelatin, agar and broth tubes and scattered free on the top and bedded in the substance of agar plates. All the tubes and plates, whether at the room temperature or incubated in the thermostat, remained sterile.

The tendons can not be sterilized by heat, as the temperature of boiling water destroys them in a very few

Fig. 5.—Whooping Crane (*Grus americana*).

minutes, converting them into a jelly-like mass. Boiling in alcohol was not tried.

After assuring myself of the reliability of the sterilization I employed the tendons in a number of cases. I tied the brachial artery with a moderately large tendon in an amputation near the shoulder for a railroad crush of the left arm. The tissues were widely devitalized by the injury beyond the level of apparent gross destruction. As a result there was some amount of breaking down of the skin flaps. One deep suture of cat-gut became infected and was discharged. The heron tendon gave no trouble and was not heard from. In a second case, I used a heavy tendon in suturing the aponeurosis of the external oblique in a modified Halsted operation for hernia. Four weeks after the operation the suture could still be indistinctly felt through a rather thin abdominal wall. Two weeks later it could no longer be felt. In a third case, with old enlarged glands in the left groin, probably of venereal origin, a clean dissection of the groin was made and all the enlarged glands were removed. A heavy heron tendon was used in the deep layer of the wound and a light one was used as a subcuticular stitch for the skin surface. The wound healed *per primam*. The subcuticular stitch was removed on the seventh day. It showed little if any alteration. The latest case in which I used this material was a cystic ovary with a heavy broad pedicle. After crushing the pedicle with an angiotribe, a heavy crane tendon was used to tie it off in the groove made by the instrument. Prompt healing was obtained and the ligature has not been heard from.

An effort was made to determine just how long these tendons would last in the tissues. Tendons of *Ardea herodias* were buried in incisions in the erector spinæ mass of two dogs at intervals of a week. At the end of six weeks when the dogs were killed, each dog had a series of six tendons, the oldest of which had been in

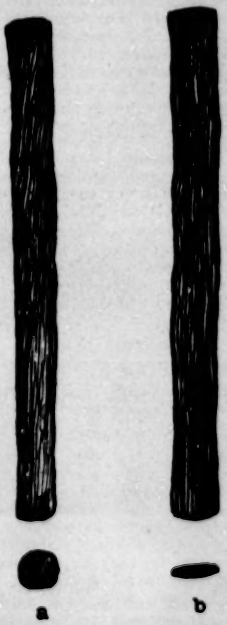

Fig. 6.—Showing diagonal course of fibers in kangaroo tendon. (a) Longitudinal course of fibers in Heron tendon (b).

the tissues six weeks and the most recent one week. The one-week tendons were practically unchanged. The two week tendons showed a slight decrease in size, which was progressive in the remaining ones. Of the six week tendons, two had almost entirely disappeared; these were thinner than the other two. The remains of the two heavier six week tendons showed a breaking strain of 4 and 5 pounds respectively.

It is apparent to me that we have here a valuable suture and ligature material; particularly where it is desirable to have a material slowly absorbable, as in operations for hernia and for ligations of large vessels and pedicles. The heavier tendons of the grallatorial birds answer these requirements admirably. The lighter

tendons make excellent superficial sutures. I do not know what effect chromization would have on them, but I do not believe that it is necessary or desirable. One of the chief disadvantages of chromicized cat-gut and kangaroo tendon is the uncertainty and unevenness of the results of the process. Kangaroo tendon is very hard to sterilize on account of its structure, cat-gut on account of its source. In this material all gross original contamination may be avoided. Indeed, I believe that with care, tendons practically sterile could be obtained in the first place. In any event they can be readily sterilized by the Claudius process. Kangaroo tendon is very irregular and difficult to handle. As purchased in the markets it is very uneven. Some of it is exceedingly good; others almost worthless. When kangaroo tendon is closely examined it is seen to be made up fibers, many of which run diagonally to the length of the tendon (Fig. 6a). In handling, these fibers split off, leaving a ligature which tapers from a stout cord to a filament. In the bird tendons the fibers are longitudinal (Fig. 6b). Kangaroo tendons are cylindrical while the bird tendons are flat, ribband like and therefore easier to tie.

CONCLUSIONS.

The following conclusions seem warranted: The leg tendons of the large grallatorial birds make an excellent suture material; strong enough for all practical purposes, readily made aseptic, slowly absorbable and easily prepared. The source of supply is practically world wide. I believe this new material warrants further investigation. Think of the comfort to the civil or military surgeon in isolated places of knowing that he can have a reliable suture material at the end of his shotgun.

RETARDED ERUPTION OF THE TEETH; THEIR LIBERATION OR EXTRACTION.*

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In order to fully understand this subject one should first be thoroughly familiar with the typical positions of the teeth when entirely erupted and in normal occlusion with those of the opposing jaw. It is also necessary to have a complete knowledge of the internal anatomy of the alveolar process. Therefore, a few illustrations showing the typically erupted teeth, with their occlusion, and the internal anatomy of the alveolar processes will be shown.

Figure 1 is a side view made from an almost perfect skull of a white woman. The teeth are fully erupted and are almost typical in their position and occlusion. It is evident there has been but little interference with the nutrition of either the jaws or the teeth of this subject. It will be noticed that the mental foramen is on a line drawn vertically downward from between the premolar teeth. This is quite typical and will be again referred to.

The mental foramen is located in the true non-movable cortical bone of the jaw on a line drawn vertically downward between the premolars. It is the external opening of a small tube communicating with the inferior dental canal. For this small tube, which I have described in previous papers, the name "mental tube" is suggested. Its internal opening into the inferior dental canal is situated in the movable cancellated tissue near the apex of the root of the canine. If the skull of an infant be examined at birth it will be found that the mental tube, or short canal, passes directly outward nearly opposite the lower portion of the germ of the canine tooth. Then, again, if the skulls of children of various ages, up to adult life, be examined, it will be found that the inlet of this mental tube has been carried forward along with the cancellated tissue of the teeth, while the outlet has, apparently, moved backward, the distance varying according to the age of the child until adult life is reached.

Fig. 1.—Side view of a typical skull with typical occlusion of the teeth.

A B

Fig. 2.—Under view of two skulls. A. From a subject about 20 years old. B. From one well advanced in years.

The position of the first molar during its early development was immediately below the upper or inner angle of the jaw. As it increases in size and the other molars are developed, the entire mass of cancellated tissue containing the teeth moved forward, the upper portion a little farther than the lower, as is indicated by the curvature of the trabecular and small cribriform tubes passing from the main tube or canal to the roots of the various teeth. To accommodate this growth the mandible proper—the cortical portion—enlarges interstitially as this process is carried on. Interference with

*Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. E. A. Bogue, Alice M. Steeves and M. L. Rhein.

this forward movement of the teeth in the cancellated tissue would have a tendency to arrest the enlargement of the jaw, no matter whether the interference be caused by artificial means or by pathologic conditions.

The development of the alveolar process of the upper jaw is somewhat different. While the teeth are developing and erupting the process extends outward and forward without the extension of the maxillæ which is observed in the mandible. When the teeth are finally lost in extreme old age and the alveolar process of both jaws is resorbed, the extended rim of the mandible remains, while the upper jaw recedes until the roof of the mouth becomes very small, as is well illustrated in Figures 2 and 3.

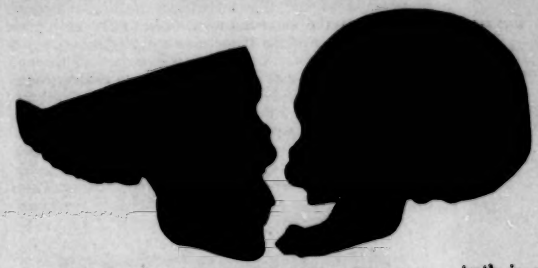

Fig. 3.—Side view of the two skulls shown in Figure 2.

Figure 4 is made from the skull of a child about six years old. The external plates of the alveolar process of the upper and lower jaws have been removed exposing the roots of the deciduous teeth and the crowns of the developing permanent teeth, except those of the lower third molar and the upper first, second and third molars.

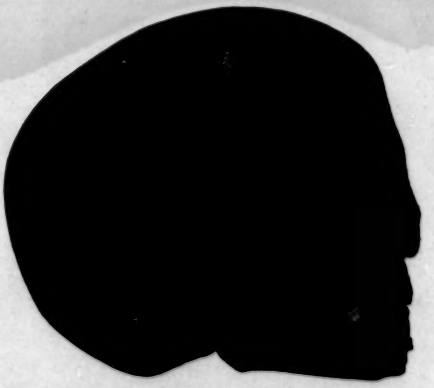

Fig. 4.—Skull of a child about 6 years of age, showing all the deciduous teeth with their roots and crowns of nearly all the permanent teeth.

In the majority of children's mouths, at about the age of 6, barring accident or decay, the upper and lower teeth (deciduous) are typical in their arrangement in the alveolar process; they are also typical in their occlusion. While pathologic and other disturbances seem to interfere but little in the arrangement of the deciduous teeth, they greatly influence the placing of the permanent teeth.

The positions of the non-erupted teeth shown in Figure 4 vary in regard to their depth in the bone. Some are deeply set, for example, in this instance the upper canine, while others are quite superficially placed, as illustrated by the lower canine. Others still are found located between the roots of the deciduous teeth, as the crowns of the premolars in the figure. If we take the positions of the developing permanent teeth into consideration, it is comparatively easy to understand why they should often be retarded in their eruption or deflected out of their typical course. If the deciduous teeth are interfered with in such a manner that their physiologic functions are impaired, they, in turn, will interfere with the physiologic functions of the tissue surrounding the permanent teeth.

Local or general pathologic conditions often cause the alveolar arch to become narrowed or shortened, which, in turn, will have more or less influence on the eruption of the permanent teeth. Malocclusion of the teeth is often accompanied by impaction, as will be shown in some of the illustrations. Occasionally supernumerary teeth, odontoma or odontoceles may cause impaction of the teeth.

Fig. 5.—An inverted impacted lower third molar.

ORDER OF IMPACTION.

My experience has been that the frequency of impacted teeth is as follows: First, the lower third molar; second, the upper canine; third, the upper third molar; fourth, the upper central incisor; fifth, the lower second premolar; sixth, the upper second premolar: seventh, the lower canine. The first and second groups of this classification will, without doubt, be accepted by all familiar with the subject under discussion. In the museum of the dental department of the University of Pennsylvania the following specimens will be found: Twelve impacted lower third molars, nine impacted upper canines, two of which are in one jaw; two impacted upper third molars, both in the same jaw; two impacted lower second premolars.

Examination of Figure 4 makes apparent reasons for this order of impaction. It will be seen that the germ of the lower second molar is well back and partly within the ramus of the jaw. The germ of the lower third molar is still further upward and backward. As these

teeth are developed and the jaw grows, the teeth and the cancellated tissue pass forward between the U-shaped cortical bone. If this sliding forward and downward of the tooth be interfered with by reason of inflammatory phenomena within the substance of the jaw, causing the cancellated and cortical portions to become adherent, the already erupted teeth will be prevented from yielding slightly to the eruptive force of the moving molar, and there will be no room for this tooth to slide into its proper position. The lower portion of the capsule is more liable to become retarded or fixed than the upper; consequently, in such a case the upper portion or crown of the tooth is carried forward and downward, causing it in many cases to take a horizontal position. In some instances it is turned directly upside down (see Fig. 5).

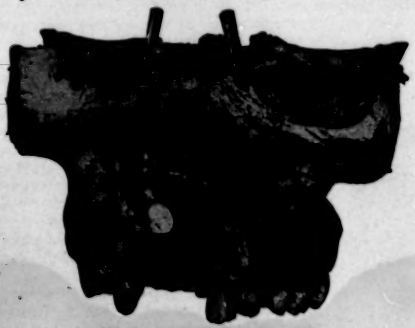

Fig. 6.—An impacted canine tooth.

If the position of the germ of the upper canine be examined, it will be found on a higher level and deeper in the bone than the other teeth. The first premolar is erupted about three years before the canine and often closes in toward the lateral, erupted five years previouly, especially if the deciduous canine has been lost early. Under ordinary circumstances the canine will be forced into a fairly typical position, but if any inflammatory condition of the jaw has been manifested the bone may become firm and the canine more or less impacted. Similar conditions can be predicated of nearly all impacted teeth.

Fig. 7.—Two impacted canine teeth.

Impacted permanent teeth should, as a rule, be either liberated or extracted. When the impacted tooth can be brought into a useful position through extraction of supernumerary teeth, or by the removal of other causes impeding its eruption, the necessary steps for its liberation should be taken. If left in their impacted state these teeth are liable to prevent the proper nourishment of other teeth and also to interfere with the healthy nutrition of the surrounding tissue. They may press on the branches of the trifacial nerve producing neuralgia, not only locally, but in remote parts, and through reflex action they may cause various disturbances in and about the head and face. They are liable to bring about inflammatory conditions of this region, produce cellulitis in the tissues of the mouth, neck, throat and temporomandibular articulation, interfere with deglutition, etc. They may cause other teeth to become impacted, or even cause malocclusion of other teeth. Then, again, parts of the roots may penetrate into the maxillary sinus or the nasal chambers, under which conditions, if they become devitalized, they are liable to cause the infection of these cavities.

Fig. 8.—A common form of impacted lower third molar.

These four illustrations (Figs. 5, 6, 7, 8) are made from dried specimens. They will give some idea of the most common form of impacted upper canines and lower third molars.

Figure 5 is from a dried specimen belonging to Dr. T. M. Whitney of Honolulu. It shows an inverted impacted lower third molar, the crown of which is partly erupted in the submaxillary fossa. This tooth would be rather difficult to extract in the living subject.—From the appearance of the illustration I would judge that it would have to be extracted through the submaxillary triangle.

Figure 6 shows the anterior surface of an impacted canine tooth resting near the anterior surface of the bone. This tooth could have been diagnosed by the use of an excavator, as the crown was quite superficially covered.

Whenever canine teeth are missing from the arch there is good ground to suspect that they are impacted somewhere within the jaw, unless there is satisfactory

evidence that they have been extracted. This is not to be assumed in the case of a missing upper lateral incisor or third molar of either jaw, and occasionally the premolars, all or any of which are often missing through non-development. As an example, I recall the case of a patient about 35 years of age, from whose arch the two upper second premolars are missing, and who claims that they have not been extracted. As he suffered from neuralgia in the anterior portion of the maxillæ, I thought that these teeth might be impacted somewhere within the jaw, but a careful exploration with instruments and radiographs taken at different angles and by several experts, failed to show any evidence of the missing teeth. The failure of these methods of exploration leads me to believe that the teeth in question have never developed.

The extraction of a tooth, such as Figure 6, would not be difficult. A longitudinal incision could be made over the crown of the tooth, and then by passing a very small spiral osteotome around the crown one would be enabled to pass a universal elevator between tooth and bone. The tooth could then be forced outward; if room

Figure 9 is made from a plaster cast taken from the mouth of a young woman about 25 years old in the practice of Dr. S. Merrill Weeks of Philadelphia, showing an impacted lower third molar.

could be made so that a small pair of forceps could be used it might be better to use them instead of the elevator.

Occasionally I have found that the bone surrounding such teeth has become very dense and closely adherent to the tooth. Under these conditions the tooth is liable to break, if great care is not exercised, and sometimes it is necessary to use a small spiral osteotome to remove the surrounding bone nearly to the apex of the tooth before it can be extracted.

Figure 7 shows two impacted canines in the roof of the mouth. They were covered principally by bone which extended down nearly to the point of the crown. These teeth had caused the devitalization of the left first and second premolars and the right first premolar, also of the lateral incisor of the left side. The apex of one of the teeth penetrated the maxillary sinus.

It is more difficult to extract canine teeth when in this position than when situated as shown in Figure 6, as the danger of causing an opening between the mouth and nose, or mouth and antrum, is greater. It is a good plan to remove the bone from the lingual surface of the tooth, so the tooth can be carried slightly downward and inward without danger of fracture. Usually there is not room to extract it in the line of its axis before it strikes the other teeth or alveolar process.

Figure 8 shows a common form of impacted lower third molar.

The anterior cusps of the tooth are often interlocked against the concave distal portion of the second molar. In order to extract such teeth it is often necessary to cut these cusps away with either a carborundum disc or an osteotome. When this has been done the instrument

Fig. 10.—An impacted second premolar and a third left molar.

can be passed under the tooth, between it and the bone, or both, until the elevator can be passed into the opening. By this means the tooth can usually be removed in a comparatively short time.

The following are from practical cases:

Case 1.—A patient was suffering from neuralgia on the right side of the face. The molar teeth apparently had been extracted from that side of the mandible, but on a closer examination a slight elevation was found about in the position

Fig. 11.

of the right second molar, and by passing an excavator into the enlargement a tooth could be felt. An *x*-ray picture confirmed this diagnosis. The tooth was removed and the neuralgia ceased. In the *x*-ray picture the condyloid process is seen plainly resting against the under surface of the eminentia articularis.

In all the radiographs I have seen of this region, when the mouth was wide open, the condyloid process

has been found in this position, indicating that the external pterygoid muscles acting together when the angle is comparatively fixed by other muscles, among which are the masseter and internal pterygoid, serve to assist in separating the jaws, by drawing the upper part of the ramus forward, which compels the anterior portion of the mandible to drop, opening the mouth.

CASE 2.—Is a patient of Dr. Dray's of Philadelphia. This patient was suffering from neuralgia of the right side of the face. An *x*-ray picture showed an impacted lower third molar with the crown resting well forward against the distal root of the second molar. In such cases the resorption of this root often takes place, producing neuralgia and devitalization of

Fig. 12.

the tooth. There was a great probability that the second molar was diseased and causing the neuralgia. It was, therefore, thought advisable to extract it, which proved the diagnosis to be correct.

CASE 3.—Figure 9 is made from a plaster cast taken from the mouth of a young woman about 25 years old in the practice of Dr. S. Merrill Weeks of Philadelphia. The central incisors are erupted with their cutting edges pointing slightly inward instead of outward, probably due to some pathologic condition of the deciduous incisors. The alveolar process around the incisors is harder than normal, which condition prevented these teeth from being carried outward during the eruption of the others. They were thus locked against the incisors of the lower jaw, causing these and other lower teeth to be held back to a greater or less degree, which in turn would cause the impaction of the lower third molars. The right central is directed more inward than the left and in proportion the right lower third molar was more deeply impacted than the left lower third molar. The left impacted tooth was extracted about a year before the casts were made. The right one was interlocked against the second molar. The occluding surface of this tooth was cut away by the use of a carborundum disc, which allowed the crown to rise slightly, as is shown in the illustration, thus making the tooth more prominent and easier to extract.

Figure 10 is a radiograph taken from a cleaned specimen of the right side of the lower jaw, showing the teeth in position in the cancellated tissue. One might well imagine that a modern orthodontist had moved the first molar "half its width backward" or held it in such a manner that it could not advance. Whether done by mechanical appliance or by pathologic changes, the tooth was held and impaction resulted. If the cancellated tissue be examined, as seen in the *x*-ray picture, it will be noticed that it is more dense around the first and second molars than anteriorly to these teeth. As the result of an inflammatory condition the cancellated tissue has become united with the cortical bone, thus making another factor in preventing its sliding forward. It will be noticed that the roots of the molar teeth are also thickened by the overaction of the cementoblasts caused by this inflammatory condition.

The inferior dental canal or cribriform tube is slightly deflected from its true course below the roots of the impacted third molar, and is also slightly deflected downward below the roots of the second molar.

It will be noticed that the second premolar stands below the occluding line of the other teeth. It has evidently been retarded in its eruption, perhaps through premature loss or de-

Fig. 14.—The second deciduous premolar is not in position.

vitalization of the second deciduous premolar. In such cases these roots are resorbed very slowly and often cause inflammatory conditions. It is possible that this was one of the primary causes of the non-eruption of the third molar.

CASE 4.—Figure 11 is from a photograph of a plaster cast of the jaw of a young man about 22 years old. Two impacted upper third molars were diagnosed by the use of an excavator. The teeth were afterwards extracted by first removing the overlying tissue and then using small forceps.

Figure 12 is from a photograph taken of the same cast (Fig. 11), with the extracted impacted teeth placed near the tuberosity of the jaw.

CASE 5.—A patient had some neuralgic trouble within the ear, and after having excluded several possible causes, the teeth were suspected, as the upper first and second molars appeared to be sensitive, and a radiograph was taken which indicated an impacted upper left third molar. At this time the patient was referred to me by Dr. George Darby. When one becomes accustomed to examining *x*-ray pictures it is not difficult to detect a shadow of the crown of a tooth in the region where the upper third molar might be impacted, but this picture gave but a slight indication as to the depth of its occluding surface. No idea was possible as to whether it was near the buccal surface of the alveolar ridge or on the lingual surface. The roots of the tooth, their number, shape and position were not shown in the radiograph. All of this practical surgical

A B C D

Fig. 13.

A B C

Fig. 15.

diagnosis had to be learned by other means. In this case a careful exploration was made with an excavator, and the position of the crown of the tooth was practically located. After the tissue covering the crown of the tooth had been cut away the tooth was grasped with small forceps. The firmness of the tooth indicated that the roots were crooked and held by bone harder than normal. By carrying the handle of the forceps in the line of least resistance, which was outward, backward and upward, the roots were unlocked from under the over-calcified bone.

Figure 13 is made from four photographs of the tooth after extraction. *A* shows the occluding or grinding surface with the points of the roots extending outward. *B* shows the upper surface, or the root end, with the four roots spread outward, approaching a horizontal line. *C* shows the distal surface, with the hook-like form of the buccal roots, and *D* shows the anterior surface. It may be interesting to know that the ear has improved since the extraction, and that the other molars appear to have lost their sensitiveness, indicating that the tooth was interfering with the nerve supplying these teeth and through reflex action with the ear.

Figure 14 was made from a plaster cast of a patient of Dr. G. Marshall Smith of Baltimore, who has kindly permitted me to use it in this paper. The patient is a girl 13 years old. Figure 14 is a side view of a plaster cast of the teeth and alveolar processes. The teeth are undersized, the incisors and canines are too nearly vertical or do not flare enough, especially in the lower jaw. The upper teeth are all erupted, for this age, except the second molars, which are ready to erupt. In the lower jaw they are all through except the second premolar, which is impacted. The space for this tooth is very narrow, in fact, not sufficient to allow it to take its proper place in the jaw. The description of the teeth on one side of the jaw may also be applied to those of the other side.

If the cancellated tissue in the region of the premolar has become solidified and attached to the cortical bone, this impacted premolar will, to a certain extent, prevent the first and second molars from advancing; these in turn will have a strong tendency to cause the impaction and malocclusion of the third molar.

The primary cause of this pathologic condition of the lower jaw is that the upper anterior teeth have not moved forward in the usual manner, as they bite over the lower anterior teeth, consequently the teeth and alveolar process of the lower jaw are held back, as shown in the illustration, and in order to liberate the second premolar and prevent the third molar from becoming impacted, the upper anterior teeth should be forced forward, which will allow correction to be made in the lower jaw.

Case 7.—A young man about 21 years old, who has suffered from neuralgia of the left side of the mandible. On examination with an excavator, impacted lower right and left third molars were diagnosed, the left one being somewhat broken. The history of the case is that part of the crown of the left third molar has been broken away in an endeavor to extract the tooth, leaving the pulp exposed. A radiograph showed that the crown was deformed, also that the anterior buccal cusp was apparently interlocked under the second molar. By careful examination with an excavator it was found that both of the anterior cusps were so far down in the tissue that a disc could not be used to remove them. The patient being etherized, a mouth-gag was placed in position and a portion of the soft tissue was removed with a small knife. The revolving spiral osteotome was placed within the broken crown, or into the pulp chamber, cutting almost through the remainder of the crown, and between it and the bone a space was made, partially in the bone, which allowed the point of a universal elevator to pass between the tooth and the jaw.

I seldom use the forceps to remove a tooth after loosening it with the elevator. In using the elevator on the left side, as in this case, it is operated with the right hand, the surgeon standing on the left side of the patient. The left forefinger is placed in the mouth by the lingual side of the tooth, and the thumb is placed on the buccal side of the second molar. This gives steadiness to the jaw and reduces the risk of slipping. As the tooth is raised from its socket the forefinger is placed so as to bring the tooth out of the mouth. If the tooth to be removed is on the right side, the elevator should be used with the left hand, if possible (the surgeon standing on the right side). If the operator must use the elevator with his right hand, he should, however, manage to guard and steady the parts with his left hand.

Figure 15 is made from three photographs of the tooth after extraction. *A* shows the outer or buccal side of its roots, in about the same position as when in the jaw. The distal cusps were broken away in a former endeavor to extract it. The greater portion of the crown was cut away with the surgical engine. On the side of the tooth there is a groove extending backward, downward and inward, cut by the osteotome. It was along this groove that the elevator was forced under the tooth, causing the slight portion of the crown that remained to fracture. In *B* the tooth is turned slightly outward, in order to show three roots and the line of fracture which liberated the tooth. In *C* the tooth is turned on its buccal surface, showing the two anterior cusps which were locked under the distal surface of the second molar.

DISCUSSION.

Dr. Edward A. Bogue, New York City—What does Dr. Cryer mean by "premolar"?

Dr. Cryer—A tooth that is in front of the molar tooth.

Dr. Bogue—Dr. Cryer, in his paper used the term "premolar" for a deciduous tooth. I am sorry to hear such misuse of terms. He also stated that Dr. Angle says that if the sixth year molars are correct in their occlusion all the rest will be right. If he will make further reference to Angle's book he will find that he states that the largest part of irregularities are to be found when the principal molar is in correct, or nearly correct occlusion. I want to acknowledge my indebtedness to Dr. Cryer; I never hear him without benefit; at the same time, if any defect in his teaching occurs I want to call attention to it, that it may be corrected. As I understand his remarks in regard to impacted third molars he favors extraction. I have a case on hand now in which by tying a small grass line between the impacted third molar and the second molar below I am bringing that third molar to a proper occlusion. I have done this a number of times.

Dr. Cryer—I said "liberated or extracted."

Dr. Bogue—I am glad to see that Dr. Cryer's remarks tend in two directions. He advocated the forward development of both jaws. I agree with Dr. Cryer, whose experience is so much greater than mine, that one should be wary of the pressure backward.

Dr. M. L. Rhein, New York City—Dr. Cryer's idea about the correction of the irregularity early in life and the sacrifice of the third molar later in life is one with which I thoroughly agree. It is expected in these cases of degeneration which cause a lack of space in the mandible itself that there will not be sufficient room for the 16 teeth to come properly into position. His conclusions, so far as they can be put into practice, I think are the proper ones; that under these circumstances it will most likely be necessary to sacrifice this third molar, and it is the one that can best be sacrificed. I sympathize with all the work that has been done for the preservation of thirty-two teeth in the arch, and especially against the loss of any of the teeth forward of the third molar. There is such a thing as going to extremes on both sides of this question, and if there are any four of these thirty-two teeth to be lost the ones that can be spared with least detriment to the patient are the third molars without the occlusion suffering. In the case of the young Baltimore girl, there seemed to

be little question as to what to do. It comes in the category named of gaining sufficient space between the first molar and the first bicuspid. If separation is made there Nature will cause that bicuspid to erupt without any difficulty. The undue prominence of the chin and the lack of bone development above it shows to me that it will not make the chin any more prominent. There is plenty of room above the chin for the osseous development, if this forward movement is brought about. I have had a number of cases in which after space was provided Nature brought the teeth into position.

DR. MIHRAN K. KASSABIAN, Philadelphia—The dental and medical professions have derived equal benefits from the introduction and application of the *x*-rays. The diagnostic value of the rays in cases of unerupted teeth is shown by Dr. Cryer's cases. The ordinary methods of probing with an explorer did not locate the absent teeth, which in some cases were bicuspids and third molars. These had insinuated themselves deeply between other teeth and the alveolar process was so dense that nothing but the *x*-ray could locate them. I employ two methods for skiagraphing dental conditions, the intraoral method and the extraoral or buccal method. In the intraoral method a small piece of film (which is light and moisture proof) is placed over the gum tissue at a point where trouble is suspected, placing the tube in such a position that perpendicular rays will be cast on the teeth and film. This method covers a smaller area but produces a picture with very sharp details, and is especially recommended for anterior teeth. The extraoral or buccal method requires that a plate 5x7 be brought in contact with the jaw at the region of the suspected trouble. The patient inclines the neck and head to an angle of about 45 degrees. The tube is placed over the shoulder to the opposite side at a distance of 20 inches from the face to avoid superimposition of the jaws. This process produces a picture of greater area and is intended for bicuspids and molars. Two skiagraphs are taken from two angles or directions to determine whether we have a buccal, lingual, distal or mesial presentment, and I might mention here that Dr. Cryer suggested that I make stereoscopic skiagrams which permit viewing by a reflecting stereoscope, and as a result instead of observing flat pictures, we obtain a relief or stereoscopic perspective effect, which shows the exact position of the teeth. I have received very good results with my stereoscopic skiagrams at the Philadelphia Hospital, where I used a special table which I had built for the purpose. There is no danger of *x*-ray burns in skiagraphing these conditions; the time of exposure is short, being from one second to two minutes.

DR. T. C. STELLWAGEN, Philadelphia—The important illustrations made by Dr. Cryer explain how great damage has been done by meddlesome dentists. "Orthodontia" is an incorrect term, the correct one would be "taxidontia." By attempts to correct dental irregularities without a proper knowledge of the development of the jaws an amount of mischief has been done which the profession does not take into account. Early in my practice there occurred a number of instances of patients saying that they had had irregularities corrected, and that since then they had suffered more or less pain and soreness about the teeth; conditions resembling those following fracture or sprain when the weather seems to bring about a neuralgic state. Very often the violence used for such correction has been sufficient to cause permanent inconvenience. Many of the cases, credited to the efficiency of the appliances used, would have been better if left to Nature. Dr. Cryer shows us that the development and growth of the jaws are not confined to any particular locality, but are general throughout, and that under peculiar circumstances we find certain centers of growth arrested, just as we see in hip-joint disease, and then permanent deformity results. The interesting question in connection with the case of the Baltimore child is, can we awaken that trophic influence? Some years ago the permanent cuspid teeth of a patient had failed to erupt, still the deciduous cuspid teeth were *in situ* to work on. Irritation of the teeth until they evinced considerable pain and soreness failed. Ligatures tied around them, hoping thereby to revive or reawaken this trophic force, failed. Extraction of one deciduous canine failed. So far there is but little, if any, hope of ever stimulating these trophic centers. The case mentioned is of interest, as the lad had spasms, caused seemingly by the canine pressure on filaments of nerve in the jaw. The spasms came only occasionally, it is true, but so growth has remissions of energy. I believed that we could do nothing better than to look forward to the time when the growth and alterations of the permanent canine teeth would cease, somewhere about his twelfth year. For about forty years, although still living, the patient has been free from spasms. That the reawakening of the trophic force could have been brought about in his case I very much doubt.

DR. BOGUE—In a case of a child 12 years of age, in whom the left central incisor had not developed, instead of tapping on that bicuspid tooth, as did Dr. Stellwagen, I put in wedges and spread the right central and left lateral widely apart, and inserted a large central on a rubber plate. The left central came down, even at that age, into correct position. I have done the same thing in the last six months. In other words, I got the room which Dr. Cryer has been telling us we ought to get. The plaster cast of impection shown us by Dr. Cryer shows also a retracted condition of the incisors, and I think he is mistaken as to the cause. It seems presumptuous for me to question Dr. Cryer, but he must not draw conclusions from the facts he presents to us, unless he expects to be criticised. The irregularities of the incisors in that case seem to me to have nothing to do with the other irregularities which he showed us.

DR. STELLWAGEN—There was abundant room for the cuspids to come down, the teeth were separated and had enough space.

DR. EUGENE S. TALBOT, Chicago—Dr. Cryer's specimens are fine and show many pathologic conditions. The explanation of an individual case does not, however, give accurate information as to the etiology. To understand the etiology, the evolution of man, the face and jaws, like the vermiform appendix, small rib, little toe and other structures of the body are degenerating under the law of economy of growth for the benefit of the organism as a whole. At about four and one-half months of fetal life, the first period of stress occurs. At this period owing to the neurasthenia of the parents and improper nourishment, arrests take place. Owing to the transitory nature of the face and jaws, they are more easily affected than permanent structures of the body. Arrests of development of some parts and excess of development of others (due to an unstable nervous system) account for all malformations. The point brought out by Dr. Stellwagen in regard to pain in the alveolar process is not uncommon. It occurs after teeth have been regulated and the question naturally arises when and how far we are warranted in the correction of irregularities, owing to the interstitial gingivitis produced. This pain occurs in ordinary forms of interstitial gingivitis, as well as in interstitial gingivitis due to injury. This disease is associated with the alveolar process throughout life. Pain may be experienced at any period. The cribbing of the horse when returned to the stall after a summer's outing and disuse of the anterior teeth is a marked illustration of this pain. The eruption of the cuspid tooth seems to be a providential process by which the anterior and posterior teeth are, in a measure, moved forward or backward for the purpose of enlarging the dental arch.

DR. CRYER—In regard to the use of the term "premolar," I perhaps should not use this word before a dental society, as I believe they have arbitrarily adopted another term, which, however, I can not accept in my writing. A premolar is a tooth anterior—in time or position—to a molar tooth. Dr. Bogue says we have not a deciduous premolar. In one sense, all the deciduous teeth are premolars, but the term is more especially and more properly applied to what are commonly called, by the dental profession, the deciduous molars. If I understand the meaning of deciduous, it means not lasting but destined to be lost or shed in time. The deciduous (premolars) molars are shed and

their places taken by the permanent premolars, or as they are known in accepted dental nomenclature, the bicuspids. The lower jaw certainly grows forward. The upper jaw I claim does not grow forward, but its alveolar process does. It extends forward, and its base is the upper jaw. The upper jaw is one thing; the alveolar process and its teeth are distinctly another. When teeth are lost, and the alveolar processes are resorbed, the rim of the lower jaw, which has gone forward, remains there, while the upper jaw, not having gone forward, is found to be almost the same as in early life. I want to put it on record that four years ago the city authorities of the Philadelphia Hospital recognized the dental profession by adding four doctors of dental surgery to the medical staff of that great hospital, giving them the same standing as the medical men. Last year, at the suggestion of the dental staff, an extensive apparatus for *x*-ray work was added to the already well-supplied hospital, and the dental department was put in the highest possible condition for usefulness. Dr. Kassabian has spared neither time nor energy in working up the use of the *x*-ray for the benefit of the dental students who have attended the dental clinics given at the hospital.

MULTIPLE ABSCESSES OF THE OMENTUM.

REPORT OF TWO CASES.*

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Under the title of "Das Netz als Schutzorgan," E. de Renzi and G. Boeri[1] of the first medical clinic of the University of Naples, publish the results of experimental researches. Like von Recklinghausen, Bizzozzero and others, they have demonstrated a striking similarity in contrasting the function of the omentum with the lymph system, in its activity in the absorption of substances from the peritoneal cavity.

The attraction of the omentum to the site of injury, foreign body or inflammation, in its endeavor to protect the abdominal cavity, is well known. Experimentally, by these men, it is shown that in young animals, after the removal of the omentum, there is retardation in general development, and in adults their susceptibility to abdominal infection is markedly increased after the removal of the omentum. After the circulation in certain viscera, notably the spleen, has been impaired by the ligation of the afferent or efferent vessels, the omentum is shown to envelope, partially at least, that organ, and by anastomosis of vessels, to successfully aid the circulation through the impaired viscus. Its tendency to form collateral circulation with the viscus or parietes to which it so attaches itself, has led surgeons to utilise this function for the establishing of compensatory circulation, as in the operation for the relief of cirrhosis of the liver.

These experiments have further shown that if both afferent and efferent vessels of the spleen be ligated, that organ becomes necrotic; but soon the omentum forms a dense network over it, a veritable capsule, and in time the splenic substance undergoes a complete absorption. Nor does the animal suffer from its lack of spleen, but enjoys its usual health, thus showing a substitutional function in lieu of the lost spleen in its hemolytic capacity.

If, however, the omentum is removed and the afferent and efferent vessels are ligated, the animal soon dies, the death being due to rapid autodigestion or fermentative changes in the splenic tissues and the absorption of the same. The protective action on the part of the omentum, however, walls off promptly the spleen, and, supplying it with a circulation, prevents autodigestion; while affording a dense capsule, allows of such slow absorption that the body is able to form autolytic or zymostatic substances whereby to protect itself. A similar function of the omentum was observed when the vessels of one kidney were ligated; this was followed by absorption of the kidney by the omentum, which had formed a dense capsule about it.

Foreign bodies introduced into the peritoneal cavity were promptly walled off by the omentum. Clinically, this plastic power of the omentum is shown when that organ is applied to the resected surface of the liver, against a wound of the pancreas, or against any intra-abdominal injured surface.

The sparsity of literature of the omentum is remarkable, and on this account the above abstract is supplied here. The following cases are reported as showing a pathologic condition of the omentum nowhere encountered in literature. The cases, to me, seem to indicate a protective power of the omentum exceeding its ordinary well-established function. Commonly, septic matters and bacteria, brought in contact with the omentum, undergo their hemolytic destruction within the omentum without leaving any anatomic trace of their visitation on the tissues of the omentum. In the cases about to be reported this function is varied from. The materia morbi had passed the prohibitory portals of the omentum and had become implanted in the omentum at various points, and were there held in more or less inoffensive isolation or incarceration for a long period of time. Occasionally, incident probably to physical strain or debility, or the disturbance of an altered menstruation, the poisonous elements contained within these foci were liberated, and symptoms of grave systemic sepsis prevailed for the time.

Both cases occurred in individuals who had been celiotomized for simple, non-inflammatory conditions, and in each instance a general peritonitis had immediately followed the operation. Years had passed after this occurrence before the cases came to me. Meanwhile the patients had suffered more or less invalidism from abdominal tenderness and pain, and occasional outbreaks of constitutional sepsis, indicating gravity by the attendant fever and extreme systemic depression. Each individual, during the intermission between attacks, showed outwardly little or no evidence of disease.

The physical examination in neither instance had given characteristic evidence of unusual pathologic conditions before the operation. Characteristic of the condition found, were multiple abscesses strewn through the omentum. The abscesses were small, surrounded by a tissue which macroscopically resembled granulomatous or sarcomatous tissue. Around this there was the thickening of the part of the omentum in which the abscess was situated.

The great number of these abscesses in the first case precluded the removal of all of them. Portions of the greater omentum removed then, and others taken at the postmortem, two days later, were subjected to bacteriologic and microscopic examination. The former revealed the presence of streptococci in pure culture, and the tissue was granulomatous, such as would result from chronic irritation.

The second case was complicated with gallstones, and only these were removed at the operation. The appearance of the omental tumefactions, indicating numerous

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suppurative foci, surrounded with granulomatous tissue and increased thickness of the fat immediately adjacent, reminded me too vividly of the gravity of the affection in the former case to encourage further efforts at this time, owing to the enfeebled condition of the patient. After satisfying myself that it really had these characteristics, whereby but least handling possible of the tissues was incurred, I decided not to attempt any more at this sitting. This patient, like the former, died within less than three days from grave sepsis. In neither case was there evidence of infection about the wound nor general peritonitis.

The first of these cases I operated on at my sanitarium in April, 1897; the last at the Deaconess' Hospital in March, 1903. These cases stand out in my experiences without further parallel.

CASE 1.—Miss P., nurse, aged 33, presented herself first in February, 1897. She was operated on two years previously at Chicago by a noted abdominal surgeon for retroflexion of uterus, the uterus being ventrofixed. The operation was followed by general peritonitis. The fixation sutures were removed on the second day. Patient recovered slowly, but never fully regained her general health. The menstrual period was afterward attended with more or less chilling, pain and fever. Between periods, notably after physical exertion, there was more or less abdominal pain and tenderness. Patient attempted light nursing, but every now and then, on account of her physical suffering and weakness, was incapacitated. An operation was undertaken one year later for her relief by another surgeon. The patient related that this was witnessed by her sister. This effort was abandoned, even before the incision had reached the abdominal cavity. Why this was abandoned, she never heard, but thought it pertained to difficulty in the narcosis.

Examination.—Patient was a well-formed, muscular individual of excellent constitution, naturally healthful and cheerful. It seemed difficult, seeing her, to believe that she was really suffering seriously. She complained of much abdominal pain, weakness and lack of endurance. I found indefinite tumefaction in various parts of the abdomen. These were difficult of examination on account of rigidity of the abdominal wall. Vaginal and rectal touch revealed uterus in retroflexion, prolapsed and enlarged ovaries, tissues massed together by adhesions.

Diagnosis.—Chronic peritonitis, with suppurating foci.

During a few weeks of local and general tonic treatment, the patient gained a little in strength, and pelvic swelling became smaller and less tender. The next menstrual period, however, was accompanied with chill and fever, yellow skin, depression and great weakness. This condition indicated to me that my treatment was little more than temporizing, and that more radical measures must be looked to for relief.

The patient, a very intelligent woman, expressed her conviction that she was gravely ill and must have something done, lest she die.

Operation.—The operation revealed the condition of the omentum already described, that part nearest the pelvis being most heavily involved with these suppurating foci. This part was removed. The uterus and ovaries were released from their adhesions, the latter removed and the uterus fixed by ventral suspension. These organs seemed not involved in the suppurative disease.

The patient early developed sepsis as before, but of a graver type. The temperature ran up to 103 and 104; the pulse was rapid and weak from the beginning, and grumous vomiting preceded death, which occurred after a little less than three days. The tissues were subjected to microscopic and bacteriologic examination, with the results as stated.

CASE 2.—Referred by Dr. Cross. Mrs. M., aged 37.

History.—Was operated on for an ovarian cystoma by a local surgeon about eight years previously. Both ovaries were removed on this occasion. There had been no inflammatory disease of the pelvis before, but the operation was followed by general peritonitis, which very nearly took the patient's life. The recovery lasted three months, and ever afterward she suffered much abdominal pain and distension and inability to endure strain. Strain was followed with fever and great general debility. Gradually, however, she gained, and for a time promised full recovery. About four years ago she began to suffer attacks of acute pain, referred to the stomach. They were associated with indigestion, and, in turn, she had consulted numerous physicians and been treated for months at a time at various renowned sanatoria. She had obtained little and only temporary relief, if any, at these places. Latterly the attacks recurred at shorter intervals, were more severe and lasting, and were very weakening. Dr. Cross saw her a week before I was called, when he prescribed to relieve her pain, but made no thorough examination. He was recalled the day before he called me to see the case with him. This time he found the patient jaundiced, vomiting; the liver enlarged and very painful; a tumefaction in the right hypochondriac region. The stools were various, bilious and acholic. Temperature, 100 to 103.5; pulse, 120 to 140.

Examination.—I found a woman of fair nutrition, rather septic in appearance, yellowish skin, vomiting mucus or mucobilious matter; of heavy mind; limbs drawn up; abdomen very tense, especially over right half; liver dullness increased upward and downward, and continuous down from it to very near Poupart's ligament, a heavy, doughy swelling completely filling that side of the abdomen in an anteroposterior direction, and of a hand's width or more.

Diagnosis.—A diagnosis of gallstones with cholelymphangitis was made. The swelling in the right side below was not determined, but it seemed to stand associated with the same process. An unusual location and degree of distension of the gall bladder was considered.

Treatment.—Ice bag over the liver, sodium salicylate and salt solution by rectum and other rectal feeding were resorted to for a few days, with some symptomatic relief, before operating. As in the other case, the patient herself was impressed by the serious nature of her disease, and anxiously desired relief.

Operation.—The operation revealed the swelling below to be composed of almost the entire omentum. This was drawn to the right and lay there rolled on itself, thickened greatly, adherent to the ascending colon and small intestines. At many points it was studded with suppurative foci, so much resembling those seen in the former case as to suggest the same condition. The gall bladder was found considerably distended with fluid and gallstones. From the history of the case it seemed probable that the patient's recent suffering was caused more directly by gallstones. I therefore decided to attempt no more at this time than to remove the gallstones and establish a biliary fistula. Upward of 400 stones were removed from the gall bladder and common duct, the stones varying from the size of a millet seed to that of a filbert, there being only a few large stones in the lot. This was accomplished without opening the common duct, stripping it being found efficacious. The cholecystic contents were nonpurulent, the walls not more than hypertrophied and congested. No bile was spilt into the abdominal cavity. The omental tumefaction, beyond a slight effort to disentangle it, and to satisfactorily examine into the nature of the nodular swellings found through its substance, was not dealt with. The patient rallied from the narcosis and operation without shock. There was good drainage from the fistula, and there was biliary discharge through the bowel within 24 hours. There was no abdominal distension and little vomiting, and the patient declared herself much relieved and was very hopeful. After the first 24 hours there developed evidence of a grave sepsis, involving temperature, rapid heart's action and breathing. Local conditions appeared entirely negative. The wound remained throughout without swelling or tenderness, the abdomen without distension, or even pain, excepting tenderness over the tumefaction in the lower right side. There was little vomiting until the last, death ending the scene about the third day.

Autopsy was not permitted.

From my consideration of the first case, I think that I can exclude sarcoma. The presence of pus in each nodule, the long existence of the disease without metastases, the recurrent attacks of septicemia, and the beginning with a febrile peritonitis, all speak for an inflammatory infection. Then there was the finding of streptococci in pure culture.

The second case was complicated with gallstones, and this may be assumed to cloud its diagnostic reading. Besides, none of the nodules were subjected to a bacteriologic or microscopic examination. The history and the gross appearance were strikingly similar to those of the first case. I think I may exclude an accidental infection at the time of the second operation to account for the fatal septicemia.

I have never seen the omentum display a similar appearance in cases where grave sepsis prevailed. In my experience, abscess of the omentum is confined to these cases. The morbus materiæ taken up by the lymph channels of the omentum are generally destroyed and disappear without evidence of implantation within its tissue. Thus, a part of omentum lying contiguous to an infected region will become adherent to it, but if stripped off will show no gross evidence of inflammatory activity within itself. The dissemination of purulent foci, as in the cases mentioned, surrounded by the products of inflammatory reaction, and persisting, as in these cases, for years, I have been unable to find reported anywhere.

THE PROPRIETY, INDICATIONS AND METHODS FOR THE TERMINATION OF PREGNANCY.*

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It is apparent that there is a strong tendency generally in the medical profession toward a broadening of the indications for the termination of pregnancy. It seems that the wisdom of this can scarcely be questioned. While it may be said that this may open the way for the not overconscientious physician, by distortion of the symptoms and indications, to perform abortion in many unnecessary cases, it is believed that this will not be true to any large extent, as the great majority of physicians are undoubtedly honest in this respect as in other things, and are no more likely to go astray than formerly. Temptation and opportunity are always present for those who may wish to take advantage of it. That errors of judgment or of unintentional misunderstanding may occasionally arise there is no doubt.

I believe I am right in stating that it has always formerly been considered that the termination of pregnancy was indicated only in the presence of some acute condition which immediately and seriously threatened the life of the mother, such as pernicious vomiting, hemorrhage, convulsions or the toxemia of pregnancy. On the other hand, in diseases not of an immediately threatening nature, but which usually become dangerous at or near the end of pregnancy, such as certain forms of heart disease, chronic nephritis, diabetes and phthisis, abortion was not to be thought of as a prophylactic measure early in pregnancy, as a preventive to the progress of the diseased condition. But, if late in pregnancy the disease should come to threaten the mother's life, then induction of labor was entirely justified. That is, if the woman became pregnant, she was held in a way to be directly responsible for that pregnancy, and nothing could be done immediately to prevent a probable dangerous condition in the future, or to stay the advance of a serious disease which pregnancy was almost sure to aggravate.

That there is a change in belief and also in practice is seen by consulting the older and the newer text-books on obstetrics. The former, as a rule, hold that induction of abortion is justifiable only when the patient is suffering from such grave disease that her life is in imminent peril, while the more recent works grant that the termination of pregnancy is entirely justified to prevent the advance of what might later prove to be a fatal disease.

Accordingly, then, we have under these somewhat changed conditions what may be known as the medical indications for abortion in early pregnancy. These are seen chiefly in the presence of a certain few chronic diseases which usually become seriously aggravated by the occurrence of pregnancy.

TUBERCULOSIS.

Tuberculosis is, perhaps, the most common of these conditions. I believe it was formerly held that tuberculosis was kept in a quiescent state during pregnancy, or even that pregnancy exerted a favorable influence on tuberculosis. Contrary to this former belief we now know that pregnancy has a most unfavorable influence on the course of tuberculosis. In many patients even with incipient phthisis, the disease makes such rapid progress that by the end of pregnancy the patient is hopelessly overcome by it, and often scarcely able to outlast the labor. It is conceded that cases of early tuberculosis in which under proper surroundings and medical care a cure might easily be effected, when subjected to the extra strain of pregnancy, rapidly become in a condition beyond the reach of medical skill. If, in such a patient, the pregnancy is terminated early, the prognosis for complete recovery under suitable treatment is often good, and the patient may live to bear healthy children in later years. Otherwise the mother's life is kept in grave danger for the sake of the child, whose chances are not too favorable when born under these circumstances.

A case of this nature was seen by me in consultation recently. The patient was a young woman, married one year, apparently perfectly healthy at marriage. No trouble was noticed till about the time she became pregnant, when she was found to have early tuberculosis of the lungs. As pregnancy advanced, she ran down very fast. In the later weeks of pregnancy it was largely a question whether or not she would live till labor began. Her labor was easy, but after a short first stage she was delivered by forceps under light anesthesia. She survived the labor only about a week. Under an early induced abortion and suitable treatment, it seems that she might have recovered and lived to bear and nourish other children.

On the other hand, there is much less danger from pregnancy to the mother in the more chronic forms of tuberculosis. Many of these women bear several children before apparently any serious burden is added to their condition. A patient whom I have had under observation through four pregnancies is a notable example of this condition. Nine years ago she had an operation for tubercular empyema. She made a fair recovery, but has had a cough and expectoration since. In this time she has had four children, the last after in-

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duced labor for serious symptoms at the seventh month. Her condition from year to year has not changed much until recently, as the first three pregnancies were endured without disturbance. There is little doubt that if she had not been subjected to the strain of these repeated pregnancies she would to-day be a comparatively well woman. She has repeatedly been advised not to become pregnant, but it is a case in which one would not feel justified in performing abortion to relieve her of the pregnancy because of absence of acute symptoms, and because the disease did not appear to be making notable progress. In fact, no serious symptoms were shown at any time until near the end of the last pregnancy, and labor was then promptly induced.

It has been considered that unless abortion was performed early in pregnancy in tuberculous subjects, that it was unwise to interfere, and often in the latter part of pregnancy it has seemed as if nothing were to be gained by the induction of premature labor. Yet in experimental work in pregnant animals inoculated with tuberculosis, when early abortion occurred, the mothers survived longer than when the pregnancy was advanced or went to full term.[1] Moreover, my experience with the patient mentioned above would seem to controvert the idea that in such a case nothing is to be gained by inducing premature labor, because of the feeling that the mother's condition anyway is hopeless. This premature infant, now nine months old, is in good condition, and the mother, who has gone from the city to live in Sharon, is gaining fast, and bids fair to obtain a new lease of life. At the seventh month, when labor was induced, it seemed that she would not survive till full term if pregnancy were allowed to continue.

Pregnancy in certain women with a bad family history may almost be regarded as a predisposing cause of tuberculosis, and some statistics seem to show that a number of cases of tuberculosis develop largely as a result of pregnancy. While we might consider it impossible to terminate pregnancy in a person with merely a marked predisposition to tuberculosis, yet undoubtedly it would be perfectly proper in such a case to strongly advise such a woman not to subject herself to the risks of pregnancy.

HEART DISEASE.

Heart disease is a condition which often may not require the interruption of pregnancy, although in its presence the patient should always have the most careful oversight. Many women with heart disease go through pregnancy without any discomfort whatsoever. The appearance of any signs of cardiac disturbance early in pregnancy, I believe, is an indication for early interference with the pregnancy, because with the increased size of the uterus there is certain to be increase of the cardiac disturbance, and the mistake of waiting too long is easily made. Because under rest in bed and tonics, the patient for a while seems to be doing well and gaining, it is no indication that she will be able to continue through the pregnancy, since rapid changes may occur later, and then interference is likely to end in the death of the patient.

NEPHRITIS.

Chronic nephritis is usually an indication for the early interruption of pregnancy; not that a considerable number of cases would not survive the pregnancy, as the danger of the onset of eclampsia is small, but the kidneys are left in a very bad state after delivery. It has been shown that about 33 per cent. of women with chronic nephritis who go through pregnancy and who survive labor die not long after, while the fetal mortality in patients delivered at term is high, and has been estimated to be about 60 per cent.[2]

Bovée has recently called attention to the fact that pregnancy is dangerous to women after removal of one kidney, and even although the remaining kidney is sound, he advises prevention of conception, or, in case conception occurs, the induction of abortion.

In the acute nephritis of pregnancy, or in the so-called toxemia of pregnancy, emptying the uterus may not always be the first indication, even in the presence of convulsions. If, under thorough treatment, the symptoms do not relax, but the condition grows progressively worse, then there is usually no question as to the treatment. A discussion of this, however, would bring up the treatment of eclampsia, which I do not wish to do now.

OTHER CONDITIONS.

There are a number of other chronic maternal diseases, such as grave anemia, diabetes, chorea, etc., none of which are very common in connection with pregnancy, but all of which may become serious, and in the presence of the severer forms of which termination of pregnancy is usually indicated.

Another maternal condition which, although not recognized as a separate disease itself, presents all the difficulties in treatment of serious disease, is the pernicious vomiting of pregnancy. There is little new that can be said in regard to its cause or treatment, although I believe it should be classed among the toxemias of pregnancy. Many cases yield only when the uterus is emptied. When the vomiting is continuous, regardless of the ingestion of food or liquid, and when absolutely at rest in bed, the patient rapidly becomes weak and exhausted, rectal feeding suffices for only a short time, and the indications for terminating the pregnancy rapidly become prominent. All writers insist that the operation must not be postponed too long, and I would simply repeat the same. While most cases do well and recover quickly after delivery, yet not all do, and I have recently seen two fatal cases. The first was undoubtedly fatal from the start, as she was in very poor condition. She was under the care of a most careful practitioner, and the operation was quickly done under very light anesthesia. The second case proved fatal because of delay owing largely to the religious question.

Acute diseases arising early in pregnancy are not usually an indication for emptying the uterus, but in the presence of most of the acute infectious diseases when severe and accompanied by high temperature, fetal death and abortion are apt to occur. Late in pregnancy, it is usually conceded better not to bring on labor, especially by rapid dilatation and delivery, as labor often tends to aggravate the symptoms. If labor intervenes, however, it is usually well to hasten its termination in a moderate way.

In acute conditions when there is threatening the the loss of any of the special senses, such as the eyesight in Bright's disease, or the mind in melancholia or other nervous affections, there should be no question of the propriety of terminating the pregnancy.

The foregoing comprise the chief medical conditions

1. British Med. Journal, Dec. 12, 1903, epit., p. 92; Boral, Il Policlin, Oct., p. 803.

2. Hofmeister: Monats. für Geburts. und Gynäkol., Oct., 1903.

for which the induction of abortion is apt to be indicated. In addition there are certain surgical conditions which it is only necessary to mention in this connection. Pregnancy with tumors in the pelvis, cicatrices and tumors in the vagina, and incarceration of the retroverted pregnant uterus, are now better treated by other methods than by the induction of abortion. Early pregnancy with cancer of the cervix is probably best treated by a prompt operation for removal of the whole uterus.

The method of procedure in pregnancy, complicated by contracted or deformed pelves, is not nearly so difficult a problem as formerly. It would be an extremely rare instance in which one would now be justified in emptying the uterus early in pregnancy because of any degree of shortening of the pelvic diameters, and then only in the presence of some positive contraindication to the cesarean operation at term.

On the other hand, I believe that the mother does have a right to say for herself whether she prefers to have cesarean section performed at term, or to have labor induced at the seventh or eighth month, although we know that the mortality of the premature fetus, even at the thirty-sixth week, and when surrounded by the most favorable conditions, has been very high, probably in the vicinity of 50 per cent.

Induction of labor is usually indicated in placenta previa as soon as the diagnosis is made, although in a favorable case one may be justified in waiting for a short time, when the fetus is approaching the viable period, and the patient can be carefully watched and kept at rest.

I am aware that occasionally in connection with this subject the religious question seriously confronts the physician, and he must always be careful to respect the belief of the patient and her family. The physician, however, can not let this influence him in considering his patient's condition. If the termination of the pregnancy is, in his opinion, necessary, then it becomes his duty to advise it. When the circumstances are such that the spiritual adviser forbids an operation, it is sometimes very difficult for the patient and her husband to decide the question, but in the presence of the severer forms of disease, the condition of the patient is so distressing that they rarely hesitate long.

The position of the Roman Catholic Church in this matter I regard as perfectly just and logical. We could scarcely expect a religious body which stands for morality to do any other thing than to forbid the taking of life, even when intrauterine and before the viable period. I believe that the strenuous position of the church in this matter, in many instances, may prevent the operation for criminal abortion, and in the long run I imagine it may preserve many more lives than are sacrificed to religious scruples. I also believe that the penalties are not too severe, when abortion is done for serious conditions, by a physician and against the advice of the clergy.

METHOD OF OPERATION.

The operation of emptying the uterus in the early months of pregnancy is not usually a difficult one nor severe for the patient, under proper conditions. It can be done quickly with the curette and under very light anesthesia, so that except in extreme cases there need be very little anxiety for the patient as a result of the operation. In the later months, induction of abortion or premature labor, if performed under proper aseptic precautions, is of itself practically without mortality to the mother, and is not difficult of performance in most cases.

The most common method in use for the induction of premature labor is to insert a bougie into the uterus and keep it in place by vaginal packing. Its chief objections are that it is frequently slow in action, and also it is said to be not always certain. I have adopted this method in a considerable number of cases in which there was no reason for haste, and the result has always been accomplished. The longest time before labor started after introduction of the bougie has been four days. It is good practice at the end of twenty-four hours, if nothing has been accomplished, to withdraw the vaginal packing, carefully clean the vagina and insert a second bougie, and to repeat this again on each succeeding day till labor pains begin. The bougies should not be removed after the pains begin till labor is well under way, otherwise the pains may quiet down. The first bougie may be difficult to insert and may require a little ether to dilate the cervix and to separate the membranes which may be attached just about the internal os, but after these membranes are separated a little from below, I have never found any difficulty in inserting the bougie. Lately two bougies have been inserted at the start, and I believe that the two have proved more efficient in stimulating pains than one. I have never ruptured the membranes to induce labor, as I believe their preservation may be of importance.

The employment of the colpeurynter or of Voorhees' inelastic bag as a means of inducing labor is highly recommended, especially where the membranes are ruptured or where time is not important. The cone shape of the bag causes it to act as a cervical dilator much like the unruptured amniotic membranes. The chief objections to its use are that it is often difficult to properly insert, and there is danger of displacement of the presenting part resulting in prolapse of the cord. The cone-shaped inelastic bag is undoubtedly the best substitute for nature in suitable cases and it almost always acts as an efficient stimulator of pains.

The injection of fluids into the uterus as a means of inducing labor is not to be recommended as serious results have ensued even from the introduction of sterile water.

Other forms of induction of labor worthy of serious consideration are those by which the results are accomplished by forcible dilatation of the cervix either by the hand or by instruments. Deep cervical incisions after the method of Dührssen of Berlin find only a few advocates, and most conservative men hesitate to adopt the practice because of its very obvious dangers.

There are commonly three methods of manual dilatation of the cervix: First, when one hand is approximately brought into the shape of a cone and pushed as a wedge into the cervical canal. Second, by which one hand is used and one finger after another gradually introduced into the cervix, and separated. Third, the bimanual method, by which two fingers of each hand are introduced and then separated. In manual dilatation of the rigid os, the greatest difficulty is often encountered in forcing the cervix open, and only after repeated attempts by first one hand and then the other, and by all the known methods is one successful in accomplishing dilatation. But even after the closed fist can be inserted and pulled out through the os there is often great difficulty in the delivery. Manual dilatation in many cases can not be considered at all satisfactory, but until recently it has been the only possible thing in most cases in accouchement forcé.

Complete instrumental dilatation of the cervix for rapid delivery is rather a new proceeding, and is still *sub judice*, owing to the fact that there has never been until recently any instrument devised which could efficiently and thoroughly dilate the cervix up to the full dilatation.

Many men object to instrumental dilatation as a dangerous procedure because of the danger of deep cervical lacerations, but in many cases it is impossible to dilate the cervix by hand and not cause tears. Williams, who is not in favor of the instrumental dilatation, although he speaks guardedly, in a recent article reports two fatal cases of rupture of the uterus after manual dilatation in accouchement forcé,[3] also seven other cases in which deep tears of the cervix required immediate operation for control of the hemorrhage. I am myself cognizant of several cases of rupture of the uterus which have occurred after manual dilatation.

Any contention over the use of methods or of instruments can be settled, I believe, in only one way, and that is by the results of the individual operator. If one finds that by adopting certain methods he obtains better results than by others, then that method is by all means the one for him to pursue. Other observers may get different results and naturally make their deductions accordingly. To the average man the operation which accomplishes the result in the easiest manner and with the least damage is the most satisfactory, and that operation, whether it be by hand or by instrument, is the one for him to adopt.

That there is a certain legitimate demand for a mechanical dilator of the cervix in pregnancy and in labor is, I believe, plainly evident. This demand is attested by the various instruments which have already been devised for this purpose, although no one of these, except the recent one of Bossi, has ever met with much approval outside of the hands of its inventor. The danger of tearing the tissues is, I believe, in many cases not as great with the metal dilators, if they are used properly and carefully, as it is with the hand attempting to force itself into the closed cervix.

I have found that the use of the instrument gives one the greatest feeling of security because of the comparative ease with which the work is accomplished directly under the eye of the operator, where the speed may be increased or diminished according to the readiness with which the cervix stretches. The unopened os can be fully dilated from twenty to thirty minutes, but with the instrument it is not so much a question of how fast the os may be dilated, but, on the contrary, it is altogether a question of how fast the cervix will admit of being stretched, and only so fast should the dilating arms be expanded.

DISCUSSION.

DR. C. LESTER HALL, Kansas City, Mo., said that the objection to the induction of premature labor is held not only by the Roman Catholic church but by us all. It is dangerous to discuss this question before the general profession, and it is particularly dangerous for the public to have the impression that labor can be induced prematurely without danger. As operators, we know it can be done, and we are prepared to do it in certain cases, but those who deal with women and their weak husbands know that there is a constant outcry, even among good people, for the bringing about of this very thing. Speaking from a moral standpoint, when a woman, because of a contracted pelvis, heart disease, or some other condition that may jeopardize her life, can not bear children, we should suggest methods for preventing impregnation rather than to suggest remedies for getting rid of the fetus. That, too, is a moral question that confronts us and each must decide for himself. There is a feeling of sympathy on the part of the husband, and a great regard for his own comfort, that makes him agree to the induction of labor when his wife begins to vomit and suffer otherwise. Vomiting of pregnancy, while it is one of the most distressing things in the world, can be endured the longest. The correction of a displacement, the treatment of an erosion of the cervix, not carried to the extent of producing an abortion, but simply local applications, with rest and moral suasion, often will correct the trouble. The induction of labor should be a last resort. Dr. Hall said that if he were compelled to produce an abortion he would use Dr. Higgins' instrument in preference to the finger. We can never have our hands clean, and if there is any time when they should be clean, it is in an operation of this kind. Any method of producing dilatation quickly would be preferable to the finger, sound or bougie. We are glad to have an instrument of this kind at our command, but Dr. Hall is fearful of the ultimate results of this paper.

DR. C. S. BACON, Chicago, said that in considering the induction of labor in cases of chronic heart disease, nephritis and tuberculosis, we must consider not only the disease, but also the social condition of the patient. The patient may be in a condition that makes it impossible for her, under ordinary conditions, to carry the pregnancy to term without a spontaneous abortion, or without suffering seriously in health. If the woman can have the very best care, and can remain in bed during the latter part of her pregnancy, have a good nurse, etc., she may go through her pregnancy very well. Hence the circumstances of the patient is a point we must take into consideration. Vomiting of pregnancy is an indication for the induction of labor that must be handled with great care. The proper treatment of this condition is not understood nor generally followed. It is customary to neglect the first symptoms, or to make light of them. The patient is allowed to be around until she is in a very serious condition. Put her to bed, starve her for a time, eliminate in every possible way and usually she will get along very well. There can be no doubt that a clean obstetric operation is the proper method. Rupture of the membranes is indicated in one or two conditions, in hydramnion, or when there is much distension of the abdomen. The combined use of the bougie and bag is of value; the bougie first for a few hours to soften the cervix, and then the bag; and this should always be placed inside of the egg sac. Dr. Bacon has never been convinced that five or six or eight blades are better than four; he is not sure that four are better than two. It is a complicated mechanical problem which is still an open question. The efficiency of the Bossi dilator is still unsettled. The results so far have been bad. There are so many serious results and tears following the use of this instrument and its modifications, that it is extremely doubtful whether it ever can gain a place as a means of inducing labor or hurrying the termination of labor. One thing is true, the rapid induction of labor is accomplished better by a vaginal cesarean section than by means of any such instrument.

DR. R. W. HOLMES, Chicago, said that the induction of abortion is largely an ethical and religious one, while the induction of premature labor is purely a matter to be decided on its scientific merits. The former is absolutely prohibited in the Catholic church, while the latter is permitted, as it is not done with the intention of directly injuring the child. Abortions are sometimes necessary for the preservation of maternal life; the conscientious physician must inform the family of the stand of their church, must inform them of the necessity of the procedure, must inform them of the true conditions and the serious consequences if the pregnancy should continue and let them decide the course to be pursued. If the decision is contrary to his opinion he may easily and gracefully retire in favor of another practitioner. Dr. Holmes said that the surgical treatment is, in general, the best; dilate the os with Hegar's or Goodell's instruments, clean out the uterine contents with the finger or possibly a dull curette;

3. Am. Gyn., July, 1903.

the final act of the procedure must be a re-examination of the uterus so that we may be sure the uterus is thoroughly emptied. Do not curette and then stop. A friend of his had an abortion; the fetus was expelled, he curetted, packed the uterus, and the next day removed the tampon. A few hours thereafter something was expelled which proved to be a fetus—she had twins. This error never would have happened if he had re-examined the uterus. Such incompleteness in cleaning out an abortion is of frequent occurrence where re-examination is not made. One surgeon curetted many uteri previous to doing hysterectomies to ascertain how effectively it was possible to remove the endometrium. On opening the uteri he found that islands of varying size of uterine mucous membrane had been left, illustrating that the uterine lining can not be completely removed with the curette; in fact, if the uterus is scraped as we are instructed to do by books we never would have an endometrium again—these islands represent Thiersch grafts of endometrium. The Higgins dilator is more simple than the Bossi, but is equally as dangerous. The tips are too sharp, so that there is danger of injuring the uterus. The tips should be blunt, or better, have rubber tubing slipped over them. It does not make any difference whether labors are spontaneous or accelerated by the various methods of dilatation, there will invariably be cervical tears—the more rapidly dilatation is accomplished, the more certainly are these tears going to be serious.

DR. F. A. HIGGINS said that he endeavored not to advocate any radical measures, but the subject has gradually been developing, and although no paper, so far as he is aware, has been written covering the whole subject, some of the more recent books have taken it up to a certain extent. The suggestion that it is better to instruct patients how to prevent conception, than to end a pregnancy, might be true in certain cases, but it would not always be possible to do this. Moreover, he feels that this would not be as safe a proceeding in the long run, and he knows of no way to absolutely prevent conception, except by operative measures, which we are rarely justified in resorting to. If the instrument is used with ordinary care bad results will be less frequent than with forced manual dilatation. Great damage is not infrequently done by so familiar an instrument as the obstetric forceps in unskillful or rough hands, but we can not discard the instrument itself. He said that the question is still *sub judice* but he believes that instrumental dilatation properly done under careful observation, is safer with a rigid primiparous cervix than is manual dilatation or incision. He advised against instrumental dilatation in placenta previa, because the cervix is usually too soft and friable and also because of the opportunity for free hemorrhage, which may be largely controlled by the hand in the vagina.

HYPNOTIC REMEDIES IN MENTAL DISEASE.

THE INDICATIONS THEREFOR AND THE USE THEREOF.*

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The paramount importance of insomnia as a symptom of mental disease always places the discussion of the indications for and the use of hypnotic remedies foremost in the therapeutics of psychiatry.

In discussing the subject I shall consider two phases of insomnia: 1, The insomnia characteristic of the early stages of mental disturbances, and, 2, the insomnia encountered after the psychosis has become well established. The two differ from each other and demand radically different methods of treatment.

The insomnia of the prodromal period is an almost invariable symptom, varying in intensity from the simple mild form of sleeplessness to the most aggravating and intractable, demanding drastic procedure. It may exist for many months before the outbreak of the more acute symptoms. It has no marked distinguishing features, but is usually accompanied by some more or less definite head symptoms which tend to reveal its true character. The great importance of the early recognition of this insomnia, with its underlying diseased condition, offers an excuse for presenting the accompanying somatic and psychic symptoms somewhat in detail.

These symptoms may exist in the form of peculiar sensations or feelings in the head, such as are so common in neurasthenia, a feeling of weight at the occiput or over the vertex, or a feeling of constriction; or it may be a vague and indefinite "deep in" feeling, involving the whole head. Some complain of a feeling of numbness, others of fullness. Not infrequently these various sensations give rise to the idea that they are becoming insane. During this prodromal period one encounters not only the malaise that naturally succeeds disturbed sleep, but also a tendency to present a certain reserve and solitariness, but more especially an irritable mood. The patients appear as if worried. Indeed, close questioning often discloses the fact that they are brooding over what they fear to be impending "loss of mind," whence originate suicidal thoughts and attempts in one whom you may believe to be suffering only from a simple insomnia.

This period of insomnia is very often aggravated by dreams of the most distressing character, the memory of which remains and haunts the patient for many days.

Other symptoms of considerable importance accompanying this insomnia are a gradually progressive loss of weight, and anorexia. Furthermore, inquiry into the sexual life often reveals definite disturbances in this field that can not be disregarded—such as reduced sexual excitability, giving rise to fear of impending impotency, or, on the other hand, greatly increased sexual desire.

The presence of some of these various symptoms facilitates the recognition of the real character of the insomnia, and indicates the great necessity of at once establishing suitable treatment. Undoubtedly many cases of mental disease could be permanently arrested by appropriate treatment at this time.

In discussing the treatment, one must admit at the outset that there is no specific remedy. The first indication is to remove exciting causes, whether they be somatic or psychical in character. This matter assumes greater importance in this type of insomnia, because of the presence of a defective constitutional basis in the majority of these cases which strongly predisposes to an easily disturbed mental equilibrium. For this reason I may, perhaps, be pardoned for offering such common suggestions as that gastric and cardiac disturbances, nasal or pharyngeal irritation, etc., should be corrected, and that altered constitutional states, such as lithemia, gout, anemia, habitual constipation and genito-urinary disorders should be given careful attention. Again, the altered mental and physical state of the individual peculiar to the critical periods of life, namely, pubescence and involution, should be carefully considered. Although they present less definite indications for treatment, yet it is often possible to alleviate some of the physical symptoms, and, particularly in the youth, to establish a more healthy mental attitude and dispel foolish apprehensions by giving some sound advice.

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pharmacology, and approved for publication by the Executive Committee: Drs. G. F. Butler, Solomon Solis-Cohen and O. T. Osborne.

A very important matter is the removal of irritating and exciting factors in the environment and daily life of the individual. These may exist in fatiguing employment, a noisy neighborhood, needless worry over business, anxiety about illness and many other conditions that may accompany the vicissitudes of life. The irritating influence of such conditions is undoubtedly magnified by increased susceptibility on the part of the patient, also the outcome of the disease, yet it is possible to materially ameliorate the conditions by careful attention to the environment, and inability to improve these conditions may make it necessary to remove the patient to different and more restful surroundings.

It is a trite saying that in attempting to control insomnia, hypnotic drugs should be the last resort, after having exhausted all accessory remedial agencies. This maxim is a particularly valuable guide in treating the insomnia of insanity because of its chronic character and the necessity of prolonged administration of the hypnotic drug. The accessory remedial agencies referred to are probably well known to most of you, and include the warm bath, the wet sheet, massage, hot liquid nourishment, suitable exercise, etc. In employing any of the more gentle agencies, it should be borne in mind that to be most effective they must be applied at a time when the organism is tending toward sleep. So, one finds in patients who awake after a couple of hours' sleep to lie restless the remainder of the night, that the hot liquid nourishment is best not given until the patient awakes.

A simple measure of considerable importance, especially in asthenic individuals, is the maintenance of the body temperature by the minimum of heat production. This demands consideration of the room temperature and the external application of heat.

The ideal hypnotic drug, such as will promptly induce quiet, natural sleep, the extended use of which does not require increasing dosage or lead to an accumulative effect, and which is agreeable to taste and easily administered, is as yet undiscovered. It is not the fault of the manufacturing chemists who vie with each other in attempting to supply this demand. Most of these products, however, after an extended trial, fail to maintain a place among the valuable hypnotics.

The hypnotic best adapted to the insomnia of the prodromal period is one of the bromid salts, preferably potassium bromid, given alone or in combination with the sodium and ammonium salts. Their sedative effect on the sensory portions of the nerves of the cord and cerebral cortex and in relieving this so-called "pent up" or "tense feeling" renders them peculiarly valuable in this period of the disease, where there is increased irritability and nervous sleeplessness.

A combination of the bromids, especially the potassium and sodium bromid, 3 1/3 grs. each with 3 1/3 grs. chloral at a dose in the syrup of the bitter orange peel, is usually efficacious where the bromids alone fail.

Bromopin, the organic compound, which usually does not give rise to cutaneous eruption or gastric disturbance, is an excellent substitute for the bromids, given in doses of from 4 to 8 teaspoonfuls.

Trional is also valuable in this type of insomnia, always being preferable to sulfonal because its action and elimination is more rapid, and it is generally without cumulative effect. Its action on the mind fulfills the demands of the best hypnotics, producing difficulty of comprehension and reducing the impulses for movement. It is administered in hot solution (milk or broth), dosage 10 to 25 grains on alternate nights and continuously for not more than two weeks. It should be observed that large doses, to which one so often resorts, sometimes are followed by gastric and intestinal disturbances, ataxia, tremor, depression, irritability and hemolysis.

Veronal and somnos, two new proprietary drugs, are useful in controlling this insomnia. Fuller mention of them is made later.

The insomnia of a well-established mental disease is usually less urgent in its demands for treatment. It is not so universally present as in the early stage, sometimes being absent altogether and again appearing only during exacerbations.

Nevertheless, next to the conditions of nutrition and excretion, it is the most important indication for treatment. The insomnia encountered here differs in the various psychoses because of its intimate association with and dependence on other fundamental symptoms of the psychosis; particularly pressure of activity, the presence of disturbing hallucinations and delusions and abnormal emotional states, especially fear. It seems best, therefore, to take up in order the more important psychoses and discuss the various hypnotic remedies adapted to each.

In delirium tremens, and to a less degree in alcoholic delusional insanity, forms of mental disease frequently encountered by general practitioners, the employment of hypnotic measures is very essential to successful treatment. The procurement of sleep is equally important to the maintenance of nutrition and the establishment of free excretion. The second is readily accomplished, as the patient usually takes nourishment greedily. The other two indications are best met by the use of the warm wet pack, 95 degrees lasting one hour, which produces a profound diaphoresis followed by quiet and sleep.

The patients sometimes submit to the prolonged warm bath (95 degrees to 98 degrees several hours in duration) where this measure fails.

If one must resort to the use of hypnotic drugs, chloral in combination with potassium and sodium bromid 3 1/3 grains each at a dose, repeated until sleep is secured, is by far the best, unless contraindicated by cardiac complications. The dose should not be repeated oftener than every hour up to 60 grains of chloral, and then not repeated for several hours. Where such complications as fatty heart, valvular insufficiency, atheroma or myocarditis exist, paraldehyd, though less efficient than chloral, is the best substitute. The first dose should not be higher than 45 minims. It may be increased to 2 drams, and is given in ice water or whisky.

Next in efficiency to paraldehyd is chloralamid, which can be given with safety where cardiac and vascular symptoms exist. Its pleasant taste and prompt action with freedom from depression of cardiac and respiratory centers make it a valuable substitute for the two preceding drugs. It is best given in from 30 to 35 grain doses in a weak alcoholic solution. It must not be administered in alkalin or hot media. If all of these hypnotics fail one will usually succeed with a combination of a large dose of ammonium bromid with a moderate dose each of chloral and morphin. Prolonged deep sleep is not to be sought for, as this comes only with the general improvement.

There are several forms of insanity in which the insomnia is accompanied by and in great part due to a

great pressure of activity. This sort of psychomotor activity and its attendant insomnia is especially characteristic of manic-depressive insanity, but also occurs in dementia precox, particularly the catatonic form, and sometimes in dementia paralytica.

The hypnotic chosen here must subserve the function of a psychomotor sedative as well.

The only satisfactory remedy suitable for prolonged application is the prolonged warm bath—95 to 98 F. The patient remains in this for several hours until the desired effect is obtained, when he is returned to bed. The patient regularly alternates from the bed into the bath as needed, and can remain continuously in the bath without deleterious effects for many days.

Considerable difficulty may arise in keeping the patient in his first bath, and for this purpose a preliminary dose of hyoscin hydrobromate may be administered. But the patient once accustomed to the bath usually likes it.

Where the bath is inaccessible or for any reason inadvisable, and a hypnotic drug must be employed, the best is hyoscin hydrobromate. The chronic character of these psychoses makes it necessary that drugs be employed only to control insomnia and the pressure of activity at the height of the psychosis or when most needed during exacerbations. Idiosyncrasies for hyoscin are by no means infrequent, so that the first dose should be 1/250 to 1/200 of a grain, and it should be employed only with care in asthenic cases and where there is circulatory disturbance. The dose may be cautiously increased to 1/50 grain.

Scopolamin stands next to hyoscin hydrobromate, and by some is even believed to be more satisfactory, especially the product manufactured by Merck, which appears to be more uniform in its action and to give equally good results in somewhat smaller dosage, and, furthermore, is never followed by depressing effects. It is given in similar dosage as hyoscin. Where it seems necessary to repeat the dose of hyoscin or scopolamin more than twice daily, it is well to combine it with paraldehyd, which always gives very prompt and satisfactory results.

Cannabis indica is an old and standard remedy for this type of insomnia, but less reliable than hyoscin and scopolamin. It may be administered either alone 1/3 grain of the extract or in combination with the potassium bromid, 30 grains of the latter to 5 c.c. of the tincture. The lack of uniformity in the preparations of this drug is a distinct drawback to its use.

Trional and veronal are two drugs that are often employed, but the results are not satisfactory and their influence tends to wear off. Yet trional combined with paraldehyd sometimes promptly brings sleep and quiet where other drugs fail.

The type of insomnia which is accompanied by and in part due to distressing hallucinations and delusions is encountered most often in melancholia, in some cases of dementia precox, and occasionally in dementia paralytica.

The picture of profound despondency, attended by great mental anguish, lamentation and agitated restlessness with marked insomnia is well known and demands alleviation. The best therapeutic agent at our disposal for this purpose is the deodorized tincture of opium given in the smallest dose that will produce the desired effect, and it may be increased to from 20 to 25 minims two and three times daily. Morphin in doses of 1/32 grain repeated five times daily is highly recommended by some and gives better results than when given in 1/16 grain doses three times daily. If good results, it appears within two weeks, otherwise the drug must be gradually withdrawn. It is contraindicated where an asthenic condition of the patient exists and where there is gastric disturbance or albuminuria.

It can be asserted without reservation that opium or its derivatives are not indicated in any other form of insanity unless the condition is aggravated by pain; and in melancholia, unless it does good, it is distinctly harmful.

The rest treatment should be insisted on in all cases of melancholia, and with its application a moderate degree of insomnia existing independently of prolonged agitation and mental suffering does not demand energetic treatment.

Should the insomnia become troublesome, then the simple hypnotic measures ought to be first employed, as hot liquid nourishment or warm sponge bath at the hour of retiring. If hypnotic drugs seem necessary, either trional, paraldehyd, chloralamid or veronal usually suffice.

The insomnia of the depressive phases of dementia precox and of manic-depressive insanity are best ameliorated by the use of the cold or warm pack. Where there is no success by these means, one may employ the combinations of chloral 3 1/3 grains with potassium and sodium bromid 3 1/3 grains each; paraldehyd alone, trional, veronal or somnos. The insomnia of the depressive phase of dementia paralytica is most difficult to control, and often does not yield to any remedy. Chloral with the bromids given in larger doses, paraldehyd alone and in combination with trional and veronal alone should be tried.

For the extreme insomnia of the exhaustion and infection psychoses, where there is great clouding of consciousness, delirious excitement and a tendency to an asthenic physical condition, alcohol is most valuable, given in large doses in the form of whisky and brandy. It is readily added to the liquid nourishment, as forced feeding by nasal or stomach tube is usually necessary in these cases. In employing alcohol in these psychoses, special attention must be paid to the tongue, skin, pulse and respiration; if the skin and tongue become moist and the pulse and respiration slower, while the delirium subsides, one is justified in continuing the treatment, but absence of improvement demands its immediate cessation. The chief indication here is not to control the insomnia, but to fortify nutrition, guard the heart and prevent self-injury. This observation may seem unnecessary to many, but the irrational abuse of sedative and hypnotic drugs in these acute psychoses is so often encountered, and occasionally leading to fatal results, that too much stress can not be laid on it.

Prolonged warm baths are usually successful in controlling the insomnia. In conjunction with them hyoscin or scopolamin in doses of from 1/200 to 1/150 grain can be used with good results. Trional, combined with paraldehyd, is adapted to these cases, but no hypnotic drug should be long continued.

In all of these conditions the insomnia tends to persist a long time, consequently it is impracticable to attempt to do more than reduce the degree of insomnia at the height of the psychosis and at the periods of exacerbation.

One of the most obstinate forms of insomnia with which the psychiatrist has to contend is that occurring in senile dementia. The sleeplessness is accompanied by more or less intense motor restlessness, which reaches its height at night.

The occasional success accomplished by employing the more simple hypnotic measures before resorting to drugs justifies one in giving them a trial. Of the hypnotic drugs paraldehyd and chloralamid are most efficient and best adapted to these cases, because they do not interfere with cardiac function and are not contraindicated by vascular and cardiac disease.

In the limited time allotted to this paper, it has been possible to cover only the common forms of mental disease in which insomnia is a prominent symptom. Before closing, something should be said of the new hypnotics which have been so widely advertised. During the past decade many new hypnotic drugs have been discovered and placed on the market, but most have failed to prove themselves of much value in controlling the insomnia of mental diseases. These are urethran, hedonal, hypnon, ural, tetronal, somnal, isopral, chloralose.

Two recent hypnotics, still unproved, however, merit some consideration, namely, somnos and veronal.

Somnos, a definite synthetic chemical known as chlorethenal alcoholate, it is claimed, is a reliable and uniformly active drug, given in doses of one-half to one ounce, producing a quiet, restful and natural sleep, without depressive effect on the heart, circulation or respiration, and unaccompanied by unpleasant after-effects. The few reports which, unfortunately, are mostly generalized, thus far published tend to confirm the many experiments of Dr. Colin Steward, at the University of Pennsylvania, on animals, and to establish the drug as a valuable hypnotic, but more extended experience is needed before its relative position among hypnotics can be fixed.

Veronal, which was discovered by Fischer and Mering in 1903, has rapidly acquired many clients among the best neurologists and psychiatrists in Europe, including Mendel, Kron, Wiener, Berent, Poly, Jolly, Lillienfield and Oppenheimer. The claims are that it is relatively harmless and within a wide range in dosage is free from disturbing after-effects, is prompt in action (one-half to one hour), producing a quiet, dreamless sleep several hours in duration. It is given in small doses, 3 to 15 grains, and can be employed in chronic nephritis, suburemic conditions and uncompensated heart trouble. After a trial extending over one year (Van Heusen), it appears to show a slight advantage over trional. Like trional it sometimes tends to show a cumulative effect, and so should be alternated with other hypnotics.

DISCUSSION.

DR. CLEMENT B. LOW, Philadelphia—An old minister, an inmate of a home for superannuated ministers, complained of persistent insomnia, and talked and thought about it all the time. I asked him what remedy he found most effectual. He replied: "I keep a little sulphonal by the side of my bed, and when I can't sleep I wet one of my fingers and take up a little sulphonal and put it in my mouth and I go right to sleep." I mention this case because I think it one of auto-hypnotism, for I know that sulphonal is so insoluble in the gastric juice that it would take several hours before it could dissolve and produce its effect. Even then the quantity he took was too small to have any effect. His going to sleep after taking it was simply the effect on his mind. Knowing of its insolubility, I think it strange that so many physicians prescribe sulphonal in dry form, when they should have it dissolved in hot water. Patients wonder why they do not sleep at night after taking sulphonal powders, and why they are sleepy all the next day.

DR. WILLIAM J. ROBINSON, New York City—With regard to hypnotics in general, in my opinion there is no such thing, and probably never will be such a thing, as an absolutely safe hypnotic. There can not be in the nature of things; sleep is too complicated a process. It is improbable that any one will ever discover a hypnotic agent that will be entirely free from deleterious effects. Has Dr. Diefendorf had any experience with apomorphin in alcoholism and delirium tremens and other convulsive diseases? Has he given any trial to strontium bromid, which seems to be more acceptable than some of the other bromids? He mentioned several proprietary remedies. Does he think that there are any remedies in the Pharmacopeia which will take the place of those which he used?

DR. J. W. FOSS, Phoenix, Ariz.—I wish to emphasize the harmfulness which may result from the use of hypnotics. When a distinguished alienist, such as Dr. Edward Cowles of Waverly, Mass., says that one of the great causes of insanity is the abuse of hypnotics, it should be a warning to every physician, and it has been a warning to me when prescribing various hypnotics. It has led me to be very careful in prescribing this class of drugs, for fear of establishing a habit.

DR. W. A. WESTCOTT, Atlantic City—In connection with the preceding speaker's remark, I wish to say that the copying of the prescription on the box is largely responsible for the habit of self-medication. Unless the patient is in the hands of a trained nurse he will take the box and have it refilled whenever he wishes to, and thus learns the name of the drug that he is taking.

DR. W. F. WAUGH, Chicago—The condition of sleep is so dependent on the cerebral circulation that the use of agents which modify vascular pressure will bring on the condition of sleep. Much better than the use of hypnotics, which simply smother the consciousness in producing their effect, is the use of digitalis, or aconitin, according to the state of the blood tension; and these, when properly used, will bring on sleep in a way that will simply surprise those who have not yet availed themselves of these drugs in their practice for the purpose indicated.

DR. HEINRICH STERN, New York City—I wish to add a few words concerning the eventual deleterious effect of sulphonal, trional and tetronal on the organism. Hematoporphyrinuria following the administration of sulphonal has been noticed in more than one hundred specified instances. As a matter of fact, there are only very few instances of hematoporphyrinuria on record which had not been the result of medicaments belonging to the sulphonal group. The hematoporphyrin is very likely due to the anomalous and excessive disintegration of the hemoglobin which is brought about by the hypnotics of the sulphonal group.

DR. WILLIAM W. TOMPKINS, Charleston, W. Va.—Is it not a fact that in most of these cases we let the patients make their diagnoses for themselves? They come to us with their minds made up as to what is the matter with them, and often they also try to dictate the treatment. We begin usually with the bromids and similar remedies, but usually end up with morphia or the synthetics mentioned by Dr. Diefendorf. I was struck by the smallness of the doses he mentioned, the 1/32 of a grain of morphin and 3½ grains of the bromids. In my own experience patients have taken these in much larger doses before coming to the physician. And in the treatment we have as much to do with breaking up the habit of taking drugs as we have with the treatment of insomnia. What is Dr. Diefendorf's experience in the use of digitalis and other coal-tar preparations than those he has mentioned?

DR. JOSEPH CLEMENTS, Nutley, N. J.—These are abnormal cases to begin with, and in the use of drugs we add their abnormal effects to those which we already have. Dr. Diefendorf called attention to the various means and methods of putting the patient in a normal condition before resorting to the use of drugs. In this way we obtain by simple methods the desired effect, and with the least amount of medication. For instance, if we can largely accomplish the purpose with the aid of a hot bath, only a small amount of any drug may be needed to continue the effect.

DR. O. T. OSBORNE, New Haven, Conn.—Very often in these troublesome insomnias, the tension of the blood vessels has a

great deal to do with it. Digitalis will relieve it if too low, and, if too high, as in arteriosclerosis, anything that will dilate the blood vessels will relieve it. That is the reason why a little alcohol is sometimes so efficient in old people in overcoming insomnia. Nitroglycerin in small doses will often do as well.

DR. A. R. DIEFENDORF—The trend of the discussion indicates that insomnia is being regarded in a more rational and serious light. It really is a diseased condition which demands as careful study as any obscure nervous disorder. The unquestionable value of hygienic measures is attested by the fact that in some large insane hospitals not a single dose of any hypnotic drug has been given for many months. Relative to the small doses of bromids, I intended to convey the impression that they are efficacious only in connection with small doses of chloral, and as regards small doses of morphin, this drug is better given in dosage of 1/32 gr. five times daily than 1/16 gr. three times daily. What has been said by Dr. Osborne about the value of nitroglycerin in selected senile cases is borne out by my experience.

SOME ASPECTS OF THE NEWER PHYSIOLOGY OF THE GASTROINTESTINAL CANAL.*

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The relationship which exists between the functions of the digestive tract and that ensemble of biologic processes termed nutrition is both manifold and far-reaching. It may perhaps be regarded as one of the shortcomings of the strictly "cellular" physiology of the century just closed that it failed to point out the conditions of interdependence and co-operation noticeable between different physiologic tissues. The modern organo-physiology is again beginning to emphasize a large number of such connections which have too frequently been overlooked, especially in a practical way. The physician should recognize in the study of alimentation something more than the mere consideration of the solvent action which the digestive secretions can exert. Thus Bidder and Schmidt wrote over fifty years ago in their classic work, *'Die Verdauungssäfte und der Stoffwechsel": "Wir finden einen zweiten und wesentlichen Theil der Bedeutung der Verdauungssäfte darin, dass sie Träger und Vermittler des innerhalb der Grenzen des Organismus, und in gewissem Sinne unabhängig von neuer Zufuhr und dem entsprechender Ausgabe, stattfindenden Umsatzes der lebenden Materie des intermediären Stoffwechsels sind, und koennen nicht umhin, auf dieses Verhältniss ein um so groesseres Gewicht zu legen, als wir durch dasselbe in den Stand gesetzt werden, nicht auf die Abschätzung des äusseren Umfanges jenes wichtigen Lebensvorganges uns zu beschränken, sondern zugleich, wenigstens theilweise, die einzelnen Glieder jenes Totaleffectes kennen zu lernen."* It is eminently fitting, therefore, that the discussion of the perversions of metabolism should include some consideration of the recent contributions to our knowledge of the physiology of the gastrointestinal canal. My purpose is to present a number of the more important advances which the past few years have witnessed, and to point out, if possible, the lines of progress which they inaugurate.

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pharmacology, and approved for publication by the Executive Committee: Drs. G. F. Butler, Solomon Solis-Cohen and C. T. Osborne.

INNERVATION AND MOVEMENTS OF THE ALIMENTARY CANAL.

We may properly begin this review with a consideration of the innervation and movements of the alimentary canal, to the explanation of which valuable experimental data have lately been contributed. In the case of the stomach movements it has been customary almost to the present time to look on the classic experiments made by Dr. Beaumont on Alexis St. Martin as generally applicable. You will recall that these involved the observation of the movements of a thermometer, the end of which was inserted through a gastric fistula. It appeared as if the contractions of the stomach wall tend to produce a movement of the gastric contents from the cardia along the greater curvature to the pylorus, and then back again along the lesser curvature. In this way a thorough mixing of the food with the gastric secretion was assumed to occur. Such a view of the mechanical changes taking place in the stomach has, however, been radically changed by recent observations, notably those made by Cannon on living animals by means of the fluoroscope and *x*-rays. It now appears probable that there is a marked difference between the effects of the mechanical activities of the pyloric and the cardiac portions of the stomach. In the latter there is no marked peristalsis, and the food, held in the tonic grasp of the gastric musculature, shows no sign of movement; on the other hand, in the pyloric portion a vigorous peristalsis assures a thorough mixing of the food and secretion. At intervals the sphincter of the pylorus relaxes and allows the semi-fluid contents to escape. According to the newer data, then, the motor functions of the stomach are almost entirely confined to the pyloric area, the fundus acting as reservoir and only gradually impelling its contents onward.

Several features of practical importance arise from the facts just presented. In the first place, the acid reaction of the gastric contents develops only slowly in the fundus reservoir in the absence of marked triturating movements. The progress of gastric digestion may thus be delayed; but at the same time the continuance of salivary digestion in the stomach is provided for. It is well known that acids markedly inhibit the amylolytic action of saliva, the effective enzyme being promptly destroyed by a mere trace of free hydrochloric acid. Likewise the interval intervening before a reaction for free hydrochloric acid can be obtained in the stomach contents is known to be not inconsiderable, in some cases as much as three-quarters of an hour elapsing. Trials made by Cannon and Day on cats and dogs from one to one and a half hours after feeding showed that "the contents of the pyloric end were invariably strongly acid, but the internal mass in the cardiac end remained unchanged in its reaction. Inasmuch as salivary digestion may continue so long as free acid is absent, the conclusion was drawn that salivary digestion might proceed in the fundus for an hour and a half or longer without interference by the acid gastric juice." These observations have been confirmed in various ways. Later, when the contents of the fundus become more thoroughly mixed, proteolysis begins more vigorously.

The movements of the intestine have likewise formed a recent subject for discussion to which Bayliss and Starling and Cannon have contributed much. In place of the older notion of a progressive peristaltic wave by which the intestinal contents are forced along the tube we may substitute a somewhat different picture. True peristaltic waves pushing along the whole mass un-

doubtedly occur. But these are usually combined, according to Cannon, with segmentation; that is, as the food is advancing constrictions separate it into portions which may subsequently unite or join with other fragments. The orderly progression of the bolus at any point is attended by an augmentation of contraction above and an inhibition of contraction below it. Bayliss and Starling find this two-fold response to be the characteristic response of the gut to local stimulation; indeed, such a "contrary" or "reciprocal" response is apparently involved in every motor function.

Physiologists have been slow to appreciate the importance of inhibition in biologic phenomena; the illustration which progressive movement in the intestine affords of this principle is sufficiently striking to deserve particular emphasis. Thus of two adjoining parts of the gut the lower is relaxed while the upper one contracts. Meltzer has taken occasion to point out some pathologic consequences of the failure of this co-ordinated functional arrangement. If, for example, vigorous peristalsis forces onward the alimentary contents while strong contractions at the lower portion of the canal prevent their progress, the phenomena designated as colic may arise. When similar pathologic disturbances arise in the stomach, namely, when the pyloric sphincter and the sphincter antrum pylori or antrum contract simultaneously, we have a type of gastric colic. Such effects may be induced by abnormal stimuli and heightened irritability of the stomach or nervous system. The inhibition factor is wanting in these cases, whereas it is over-emphasized when signs of emotion, such as fear, distress or rage, are accompanied by a total cessation of the movements of the alimentary canal.

With reference to the lower part of the gut Cannon has found that the usual movement of the transverse and ascending colon and cecum is an antiperistalsis. This, as he says, "gives new significance to the ileocecal valve; for the food, now in a closed sac, is thoroughly churned and mixed by the constrictions running toward the cecum, and again exposed to absorbing walls without any interference with the processes in the small intestine." As the material accumulates it is then carried forward by peristalsis. The ileocecal valve is thoroughly competent for food entering the colon from the ileum.

It remains for the future to afford a synthetic conception of the entire sequence of movements which propel the intestinal contents along their path. The epoch making researches of Pawlow have made a beginning in this direction in indicating that the reaction of the food masses is the determining stimulus for the reflexes which contract or inhibit the pyloric sphincter. The novelty in this view consists in the substitution of chemical for purely mechanical factors as the effective agents in these reflexes. Free acid in the stomach induces an opening of the pylorus. The contact of the acid contents with the duodenal surfaces in turn provokes a reflex by which the sphincter pylori is closed. Simultaneously a flow of bile and pancreatic juice gradually neutralizes the acid, and a fresh outflow of gastric contents is in turn allowed. The physiologic advantage in this complicated chemical reflex is manifest. The intestine is protected from an excess of food at any time, the intestinal ferments are allowed to continue their functions, and by means of this regulatory action the acid gastric digestion gradually gives way to the more alkaline intestinal processes. Cannon has lately shown that a remarkable difference exists between carbohydrate and proteid foods in the readiness with which their ingestion is followed by a passage of contents out of the stomach. Both classes of food-stuffs provoke abundant secretion; with carbohydrates free acid develops immediately, hence the pylorus relaxes: the discharge of proteids is delayed so long as they combine with the acid and no free acid is present. Gastric proteolysis is thus facilitated by this automatic arrangement.

SECRETORY FUNCTIONS OF THE GLANDS.

Far greater progress than that already mentioned has attended the study of the secretory functions of the glands discharging into the alimentary canal. The results already gained have largely been due to the influence of the work of the St. Petersburg school and the new experimental methods introduced by Pawlow. They have pointed out with striking effect the complicated nature of the reflexes which call forth secretion. Purely mechanical or thermal stimuli can no longer be regarded as sufficient to provoke the flow of saliva or of gastric juice which attends the ingestion of food. It has been the merit of the newer physiology to emphasize the interaction of chemical and psychical factors to a degree never before appreciated. The trend of these studies is doubtless already familiar to most of you; less well known is the functional adaptation which has been found to exist between the character of the food and the resultant secretory product. A few examples will suffice to illustrate this. The flow of saliva or of gastric juice which follows the introduction of an insoluble substance like sand into the mouth or stomach of an animal is minimal and insignificant in comparison with the "psychical" secretion provoked by thought or sight or smell of food. Even more effective is the actual ingestion of true foodstuffs, and here in turn the quality of the secretion varies markedly with the composition of the food. Thus the activity of the enzymes of the pancreatic juice seems to be correlated in a marvelous way with the corresponding elements of the diet. A régime rich in fat calls forth a secretion containing a relative abundance of lipolytic (fat-splitting) enzyme; with a meat diet the proteolytic enzyme preponderates, and so forth. Furthermore, this regulative action can apparently be modified by the conditions of the diet. One is almost inclined to speak of a physiologic education of the digestive glands, and to conceive of them as being trained for fat, or proteid, or carbohydrate digestion powers by the presence of the corresponding compounds in the alimentary canal. Indeed, this conception has already been raised above the realm of mere fancy. I have repeatedly found the intestinal secretion of adult dogs free from lactase—the enzyme which splits up milk-sugar—whereas, it is uniformly present in the suckling puppy. Weinland has succeeded in inducing the formation of lactase in the pancreas of rabbits by feeding them on milk; and the very recent experiments of Bainbridge in Professor Starling's laboratory indicate, so far as they go, that extracts of the intestinal mucous membrane of milk-fed animals, injected into dogs not fed on milk, cause the pancreas to secrete lactase. We are only beginning to understand the rôle of such functional adaptations in the work of the digestive apparatus; but even now it is possible to foresee that research in this domain will yield a treasure of observations directly applicable to pathology and therapeutics as well as to physiology.

The effects of the disuse or misuse of a gland may become as clearly defined as are the analogous consequences in a muscle; the errors of one-sided diet, the possibility of the gradual functional development of digestive organs by appropriate dietetic measures, the importance of the psychologic element with its attending inhibitions

or stimulations—such are the problems which the modern experimental science hopes soon to present in a rational light. This occasion will not permit any detailed review of the facts already gained. One or two of the recent acquisitions deserve notice, however. The flow of gastric juice such as occurs in the so-called "psychical" secretion, independently of the contact of food with the stomach, has repeatedly been demonstrated; and it has likewise been shown in our laboratory that stimulation of the gastric glands may take place without any direct gastric irritation in consequence of the influence of alcohol absorbed from the intestine. These observations have been extended by Wallace and Jackson to indicate that the reaction in the latter case is a purely reflex one, and that it is not limited to alcohol, but is possessed by other irritant substances, such as oil of peppermint.

Starling has indicated the existence of a remarkable mechanism for the control of pancreatic secretion in vertebrates. It has long been known that the introduction of acids into the duodenum will provoke a flow of pancreatic juice, even after the exclusion of nervous impulses from without these organs and after inhibition of all local nervous elements (by atropin). According to Bayliss and Starling the chemical stimulation of the gland cells is due to the production (by the action of the acid) of a specific substance, secretin, from some precursor, prosecretin; the secretin enters the circulation and incites the gland to increased activity. That the active agent is not the hydrochloric acid itself is sufficiently shown by the fact that this alone does not provoke secretion when introduced directly into the blood current.

The pancreatic juice collected directly from a fistula in man or animals is practically without action on proteids. It has long been known that the proteolytic enzyme is stored up in the gland cells in the form of an inactive zymogen, trypsinogen, and is apparently secreted as such. To Schepowalnikow, a pupil of Pawlow, is due the distinction of having discovered a remarkable property of the intestinal juice in "activating" trypsinogen, i. e., converting into trypsin the zymogen of the pancreatic juice. This action is due to a peculiar enzyme, enterokinase; and the discovery of this "ferment of ferments" has led to the observation of the wide occurrence of enzymes capable of activating zymogens. Following the suggestion of Delezenne and others we may call them kinases. The presence of enterokinase in the intestinal juice of man has been demonstrated by Hamburger and Hekma, and this secretion is thereby given an importance which it has not heretofore been assumed to possess. To this may be added Cohnheim's finding of erepsin, a peculiar proteolytic enzyme which splits the primary products of digestion (proteoses and peptones) into simpler nitrogenous compounds, although it fails to act directly on most of the proteids. If the activity of the sugar-splitting enzymes (sucrase, maltase, lactase) of the succus entericus is likewise considered, we need no longer continue to say that "in the work of digestion it plays at most a very subordinate part."[1]

We may appropriately pause for a moment to picture to ourselves a small part of the alimentary changes in the upper part of the canal in the light of the newer facts. The tightly closed pyloric valve retains the gastric contents until digestion in the stomach is well under way, whereon the acid reaction developed is a sufficient stimulus to cause a reflex inhibition of the sphincter. Immediately on the discharge of the acid chyme into the upper duodenum a contrary closing reflex is inaugurated. Simultaneously the acid contents of the gut reacting on the mucous walls develop a chemical product, a secretory stimulant, secretin, which is absorbed into the blood and being carried to the gland is sufficient to incite the pancreatic flow. The resulting alkaline fluid in turn gradually neutralizes the intestinal contents; with the removal of the acid the secretory excitant is no longer produced, the flow subsides and the original conditions allowing a fresh portion of chyme to enter the duodenum again prevail. The acid chyme also exerts an influence on other glands involved in digestion. The flow of bile is increased and, according to Delezenne, the secretion of intestinal juice with its contained enterokinase is likewise facilitated by acid in the duodenum. Thus the proteolytically inert pancreatic juice is activated by the kinase so that it acts more energetically on the proteids of the food, apparently undergoing self-destruction at the same time, so that by the time the lower end of the gut is reached the intestinal contents contain very little trypsin.

Starling has suggested that "the excoriation and irritation of the lower part of the bowel and anus, which may occur in cases of diarrhea, may owe their production to the hurrying on of the active juice from the higher portions of the small intestine." Incidentally the beneficial effects following the widely practiced administration of hydrochloric acid in a variety of digestive disturbances appear in a new light; and Enriques has already been encouraged to employ this simple therapeutic agent in diverse forms of intestinal dyspepsia in the belief that the contact of the acid with the duodenal cells is a potent stimulus for increased secretory activity. The pathologic erosions which have been observed in animals after inducing a flow of pancreatic juice into the empty gut by means of intravenous injections of secretin warn against any hasty therapeutic use of this substance, for it is possible that erosions produced by a reflux of the juice may lead to the production of gastric ulcer.

The secretory processes which accompany digestion are thus being analyzed into a series of nervous and chemical factors, many of them unique in physiology, interdependent, manifold, variable and correlated. The most important practical bearing of this recent work seems to me to lie in the appreciation of the co-operative working of many functions—in the conception of digestion as "an ordered march of events." The mechanical theories of a few years ago have been replaced by a chemico-physiologic explanation of the secretory functions; and in dealing with a given pathologic condition in any part of the alimentary apparatus we must, as Starling has said, "not direct our attention to this part alone, but attempt to trace back the processes and to discover at what stage of the process, and how far back, the disturbing factor has entered."

CHEMICAL PROCESSES IN THE ALIMENTARY CANAL.

We may now turn our attention to the more purely chemical processes which characterize the digestive changes within the alimentary canal. Cohnheim has recently remarked that the importance of the small intestine in digestion is at length receiving that recognition which its central and conspicuous anatomic position demands. From this it must not be inferred, however, that the chemical transformations occurring in the stomach are of minor significance; the newer contribu-

1. Attention may here be directed to the recent announcement by Kossel and Dakin of the occurrence in the intestine of an enzyme which they term arginase, and which has the remarkable property of converting arginin, a product of tryptic digestion, into urea and other simple compounds. (Zeit. f. physiol. Chem., vol. xl[1], p. 321, 1904.)

tions have merely served to expand our knowledge of intestinal changes never before appreciated.

The possibility of a continuance of salivary digestion for some time in the less motile portions of the stomach —a feature pointed out by Cannon and Day—has already been referred to. It has long been claimed that a cleavage of fats with liberation of fatty acids may take place in the stomach. That this is the case has been made more likely by the observations of Volhard on the production of a lipolytic enzyme within that organ; the activity of the lipase seems to be inhibited readily by hydrochloric acid and pepsin. The problem of fat digestion and absorption has been the subject of no small literature, much of which is controversial in character. It seems safe to conclude from the data now available that the fats are in large part saponified in the intestine and that the resulting fatty acids are absorbed either as soaps or in solution in the bile which forms an excellent solvent for them at body temperature. The regeneration of these products into neutral fat before they enter the general circulation is equally certain. Fleig has very lately shown that soluble soaps in contact with the intestinal mucosa produce a compound, sapokrinin, which will excite secretory processes in the pancreas in much the same way as does secretin, thus giving one more illustration of the intimate connection between the digestion products and the act of secretion.

With reference to the important subject of proteolysis the possibility of a far more complete cleavage of the proteids than was formerly regarded as possible within the alimentary tract has been demonstrated. A number of simple nitrogenous compounds hitherto undiscovered in this connection have been isolated from the products of prolonged tryptic and peptic digestion in the laboratory. Trypsin and erepsin have been found to occasion a vigorous proteolysis under favorable conditions; and no little attention has been devoted to the action of the various autolytic tissue enzymes. But that such profound changes are actually taking place in the intestine during life is by no means certain. In other words, the experimental evidence at present available fails to convince one that the proteids of the food are as completely disintegrated before absorption as the beaker studies in the laboratory might indicate.

The researches of Zunz and of Reach on dogs have shown that proteoses arise in predominating quantities in the stomach and intestines after a meal rich in proteid. Peptones are found in the intestinal contents, if at all; and, like the simpler crystalline end-products, they are doubtless speedily removed by absorption as soon as formed. Unpublished experiments which Dr. Rockwood has carried out with me have made clear a marked difference in the readiness with which proteoses and peptones, in contrast with the proteid from which they arise, disappear from a thoroughly washed and ligated loop of small intestine in the living animal. The soluble "native" proteids are apparently by no means so speedily absorbed in the absence of suitable digestive enzymes as has been assumed by many clinicians in considering the utilization of nutrient enemata.

Despite these facts we have as yet no adequate conception of the actual process of proteid absorption from the alimentary tract. It has long been taught that the proteoses and peptones formed in digestion are regenerated to coagulable proteids during their passage through the intestinal wall. Glaessner has attempted to demonstrate such a possibility in the case of the stomach. His experiments are by no means convincing. Embden and Knoop have been unable to find any actual synthesis of proteid in the intestinal mucosa, while Cohnheim, Kutscher and Seemann, and Loewi assume a complete cleavage of proteid substances within the intestines into non-proteid fragments. It remains, however, for the future to demonstrate the actual immediate fate of the digestion products, whether they leave the gut in the form of the relatively complex proteoses or simple compounds like leucin, tyrosin, etc. None of these proteid derivatives are normally and constantly found in the blood; and for the present we must necessarily continue to ascribe to the intestinal wall that prominent function in the assimilation of digested proteid which has so long been attributed to it. The mechanism involved still remains obscure. There is something attractive in the theory which assumes a complete breakdown of the food stuffs prior to their anabolism into living tissue or circulating blood constituents. It is not difficult to conceive how the organism can construct from these fragments the tissues peculiar to itself and accordingly maintain its chemical integrity although the ingesta may vary widely in composition—in other words, how foreign flesh and cereal and milk-proteids may all give rise to the same serum albumin or muscle globulin. To-day our actual knowledge of such changes has scarcely passed the limits of conjecture.

The question, "Why does not the stomach digest itself?" has long formed a theme for academic discussion. We are familiar with various answers, none of which is entirely satisfactory. A similar question arises with reference to the intestine and we are still face to face with an unsolved problem. For the pancreas the answer is perhaps to be found in the absence of any active trypsin in this organ, zymogen alone being assumed to be present. In the other cases it has been customary to cover our ignorance by attributing to the living cells, in distinction from dead protoplasm, an inexplicable power to resist digestion. We know that living intestinal parasites may remain intact and thrive in the alimentary canal of their host under conditions in which dead tissues of similar composition are speedily dissolved. Weinland has noted that the extracts of such parasites have the power of retarding peptic and tryptic digestions *in vitro* and has demonstrated the existence of antienzymes—antipepsin and antitrypsin—in them. Similar enzymes can be isolated from the gastric and intestinal mucosa. They are looked on as a product of the life of the mucosa cells and as the cause of the resistance of the alimentary tract to self digestion. The blood-serum likewise has a pronounced antitryptic power, and specific antienzymes are being claimed in rapid succession for numerous organs. The significance of such discoveries, as yet largely unverified and influenced by analogous phenomena in the study of immunity, remains to be seen. It may be that the antienzymes (or the lack of them) play an important rôle in such pathologic processes as the formation of gastric ulcer, etc.

There is a further peculiar and highly significant function of the gastric and intestinal mucosa which is little understood or recognized in any practical way. I refer to the property of eliminating substances from the circulation, i. e., of acting as a true excretory organ. Isolated observations on this function are widely scattered in the literature of physiology and medicine. Thus various organic poisons, including morphin and snake venoms, have long been known to be secreted into the stomach and other parts of the alimentary canal when they are introduced subcutaneously into the body; and the therapeutic possibilities involved in gastric lavage are already being applied with beneficial effects in such

cases as acute morphin intoxication. For the most part, however, we still adhere to the long-established custom of regarding the kidney as the only organ of importance involved in the elimination of either foreign or naturally occurring inorganic compounds from the body. In a paper recently published with Mr. Thacher I have tried to point out some of the errors into which this attitude has repeatedly led physiologists and have cited various older theories of the absorption of iron derivatives as a conspicuous illustration. The failure to recognize the intestinal epithelium as a factor concerned in the removal of iron from the system naturally allowed a false interpretation to be placed on the occurrence of this element in the feces. To the earlier observers, iron in the stools was a direct indication of lack of iron-absorption, particularly in view of the extremely scanty elimination of ferric salts usually noted in the urine during the same period. But the establishment of the fact that the gut may be directly concerned in the excretion as well as in the absorption of the iron compounds made possible a new interpretation of the earlier observations. Iron might now be present in the contents of the alimentary canal, either owing to the failure to be absorbed, or equally well because it had been discharged into this channel, through the epithelial walls. It became necessary to follow the paths of elimination when the introduction of this element directly into the alimentary canal was avoided. Since it has been found that iron may be introduced either subcutaneously or even directly into the blood-current, without producing any marked increase in the output in the urine, while the feces may contain noticeable quantities of it, the significance of the intestine with reference to the elimination of this element becomes apparent.

Observations like those reported from Professor Cushny's laboratory by Good, in which lithium was found to be excreted into the stomach and intestine in larger quantity than through the kidneys, indicate the desirability of more extensive investigation carried out with this point in mind. A long list of inorganic compounds which enter the intestine in noticeable quantity when they are introduced into the body in other ways than per os might be enumerated. Calcium and phosphorus compounds are conspicuous examples. For the most part we are uninstructed regarding the relative participation of the gut as an excretory organ under conditions like those which pertain in renal insufficiency; and the significance of such an excretory function in the local reactions and responses throughout the intestine is scarcely known. The production of serious gastro-enteritis owing to the local excretion of substances is unquestioned; and this may be a potent factor in the action of toxins which produce intestinal symptoms.

Some interesting phenomena bearing on this topic have been described by J. B. MacCallum in the case of the saline purgatives. Investigations carried out in our laboratory along these lines have contributed to emphasize the importance of the gastrointestinal canal as a path of excretion for the salts of cesium and strontium —two elements selected for study mainly because they are foreign to the body and can readily be detected. Strontium salts, for example, were found to be eliminated to a relatively small extent only by the kidneys, even after direct introduction into the circulation. The excretion in the urine begins soon, and ceases usually within twenty-four hours. The larger portion of the strontium eliminated is found in the feces, whether the introduction of the element be per os, subcutaneously, intravenously or intraperitoneally. The place of excretion is apparently restricted to the region of the alimentary tract beyond the stomach.

One further recent change of view deserves mention before concluding this résumé. It has been customary to regard the feces as composed primarily of indigestible and undigested food-residues. But increasing evidence is pointing to the fact that this is frequently, if not commonly, correct to a small extent only. It is true that coarser foods and substances rich in cellulose pass through the alimentary canal in considerable proportion without utilization. On an ordinary mixed diet, however, the foodstuffs are absorbed remarkably well, and the feces owe their origin in large measure to the waste and secretions of the alimentary tract itself. A diet may thus be feces-forming in proportion to the digestive work which it entails, as well because of its chemical and physical character; and feces thus resulting must be considered as real metabolic products in distinction from the food residues.

EDITOR'S NOTE: The paper of Dr. Mendel is one of a symposium, in which Drs. Sollmann, Futcher and Hutchinson also participated. Their papers and the discussion will follow later.

THE NEW OPHTHALMOLOGY

AND ITS RELATION TO GENERAL MEDICINE, BIOLOGY AND SOCIOLOGY.*

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The distinction between what may be called the old ophthalmology and the new is one of almost unique clearness, as compared with other departments of medicine or science. Especially in medical practice the modern status has usually grown out of the older and oldest by infinitesimal increments and gradual modifications. In ophthalmology it is not so, and this fact explains why there are such profound differences of opinion as regards the claims of the new. Although both are usually practiced by the same men, they may be, and often are, as distinct in origin, theory and practice as, e. g., are otology and ophthalmology.

The "old ophthalmology" was, and is, concerned with inflammatory and surgical diseases alone, remaining ignorant of and indifferent to such relations as might exist between the eye and the general system, except as regards those minor and few diseases which arise in the body and then affect the eye. Ocular inflammations, ocular operations, and the ocular results of systemic disease—these were the limits of its interests. Even in recent text-books on medical ophthalmology, there is no thought of any other relations of general medicine and ophthalmology than those morbid ocular ones originating outside. That the eye is the starting point of systemic disease was unsuspected. In the latest, greatest, best and most official text-book on medical practice, that of Allbutt, there is not a word from the first page to the last which hints at the ocular origin of any systemic disease, not even of headache. In the text-books of general medicine by continental authors, there is the same official ignoring of the claims of the new ophthalmology. In America also most of the text-books either ignore entirely, or, what is worse, list the remote causes of one or two systemic symptoms as possibly due to the eye, but so mechanically and inattentively as to turn the student aside

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more effectively than the silence of the utter ignorers. The "praise" is very "faint," indeed, with which they condemn.

The new ophthalmology finds its objects of study and interest precisely in those systemic results of ocular conditions. I do not mean in such ways as the circulatory or metastatic transfer of inflammatory or infectious diseases from the eye to other organs, nor to the extension of localized inflammations to adjacent or even distant ones. That is another matter, and of it the old ophthalmology took sufficient cognizance. The field of study of the new ophthalmology is topographically well defined, its title clear, its methods, instruments of culture, the seed, and the crop itself, distinct, both genetically and evolutionally.

The abnormal conditions of the eye which set up morbid systemic results may, in strictness, scarcely be called abnormal, except by a strain put on the word. At least they are *per se* not morbid. They might better be called physiologically aberrant or variant. They do not originate in inflammatory or pathologic conditions, but simply in optical ones. But for us all physical optics leads to physiologic optics; primarily and fundamentally it pertains to the eye as an optical instrument, but as a living one, a physiologic camera obscura. If the photographer's camera had an elastic lens instead of a rigid one, and if its refractive power were spontaneously governed by the desire of the camera for an accurate focus of the picture, the analogy would be almost perfect. But the photographer's camera can neither direct itself nor renew its own sensitive plate, so that in spontaneous choice of scene, change of focus, and renewal of sensitive plate, the living camera is superior to the dead one. The natural difficulties of the choice of scene and of the resensitization of the plate have been beautifully overcome in the eye by the God of evolution, but other obstacles have not been overcome. The ocular camera, for instance, is double and stereoscopic, and accurately to superpose the images of both cameras is frequently impossible even after ages of workmanship. As all physiology leads to pathology, so, for physicians, all physiologic optics ends in pathologic optics. The twelve ocular muscles have a highly complex and skilled task; hence heterophoria and strabismus. Moreover, the spontaneously elastic lens grows inelastic in forty-five years, and presbyopia, at least before the days of spectacles, was a frightful tragedy. Lastly, the transparent lens could not, formerly, retain its transparency in old age, and the blindness from cataract at the end of life has not yet been entirely prevented.

The chief difficulties of the mechanic of the living camera were to secure to 1,500,000,000 human beings and to their successors in each generation, eyeballs which did not vary more than about 1/300 of an inch from a given diameter, and to make all corneas of the same radii of curvature in all meridians. These difficulties have been so great that there has probably never been such a mathematically perfect and optically exact pair of eyes in the world. Those chosen by natural selection, the elimination of the unfit and the mystery of heredity, to survive and to repeople the earth have been such as were not so widely variant as to disqualify their possessors for work and service; and the majority of their children, those now living in the world, have eyes so near accuracy in optical dimensions as to render their owners at least partly functional in the process of evolution.

This almost infinitesimal variant of 1/300 of an inch, the thickness of a sheet of paper, in eyeball measurements, may throw the unfortunate possessor out of the struggle for existence, so far as perpetuation of the race goes, at least in civilized life, and for some occupations, or it may render him a most pathetic sufferer. I say it may do so, not that it does do this invariably or generally. The simple law is that the greater the ametropia the greater the certainty that it will do so, and the more limited the range and choice of occupations. The lower, not the positively lowest, errors of refraction, however, in civilization are they which in moral persons cause the greatest personal pain and suffering. The high errors brutalize, immoralize and exclude the owner from most occupations, the lower cause pain and illness.

Eyestrain is the unfortunate and inexpressive term that has come into use for the results that follow the attempt of the eyes, brain and correlated organs, to neutralize the defective function of the optically imperfect eyeballs and mechanisms. The optical defect is not morbid and has no relation to morbidity. It is at best pathogenic, secondarily or indirectly, not primarily. Its secondary effect—the straining of physiologic muscles and nerve centers—is not in itself pathologic, but it illustrates, and best illustrates, the great truth which text-books, teachers and medical science itself are sadly prone to forget, that abnormal physiology is the origin of most pathology. Unnatural action and overaction start the morbid function which finally leads the physiologic on the postmortem table. To ignore this truth is itself pathologic pathology; to scorn it is to add unscientific sin to the symptom-complex of the scientist's disease.

It should be noted that as eyestrain is itself simply functional, not organic, so its results are at least primarily the same. Headache, the paroxysmal neuroses, many nervous and psychic disorders, epilepsy, chorea, migraine, sickheadache, gastric, digestional, and pelvic disorders, influenza, anemia, denutrition, etc., when due to eyestrain, are at first and essentially purely functional. Even those more severe diseases, such as spinal curvature, appendicitis and pulmonary and renal diseases, which are sometimes directly and indirectly the results of eyestrain, are at first characterized by a peculiar stage of functional and remediable disorder, preceding the organic, inflammatory, and incurable one.

There are valuable lessons to be gleaned from the fact of the origin of eyestrain in optics, at once historic, physical and physiologic. There is the observation that medical science and pathology did not discover it. The science of physiologic and pathologic optics came to medicine almost entirely from without. It is the gift of students of physics. Even when physicians busied themselves with it they did so purely from their interest in vision and clear-seeing, not from that of pathology. Astronomers, physicists and opticians presented their gift to medicine. Even Donders had little or no thought of the extension of the practical science made by the practical American ophthalmologist. The earliest refractionist—we must use the word—more or less accidentally and incidentally discovered the facts of the relief of systemic diseases by their spectacles. The patients made the discovery that their headaches and nervous symptoms disappeared when they wore astigmatic lenses, and they came back and told the astonished and delighted oculist about it. Mitchell, not an

oculist, heard the story from Thomson, and he told the profession about a little of it. The profession would not listen and utterly ignored it. For several hundred years the official profession would not even have anything to do with the spectacles which the non-professional invented. It allowed Franklin to invent the bifocal lens, and failed to adopt it for a hundred years. There are to-day neurologists, diagnosticians and physicians of international renown who wholly deny that eyestrain causes reflex diseases of any kind. A special meeting of the New York Academy of Medicine was recently held in which great neurologists and ophthalmologists vied with each other in ridiculing the absurdity. It is no wonder, therefore, if the stone which the medical builders refused should become the cornerstone of the temple of the opticians. These gentlemen naturally think they have a right to practice the art and science of refraction. Those who scorn the new ophthalmology would, in fact, reduce the refractionist to an optician. It is a costly blunder which the profession will resent and must unlearn, because refraction is a medical art and science in the strictest sense of the term, one requiring the highest intellectual qualities. Hence their claim can never be allowed, and the profession must, therefore, now wage a hundred-year war, which it might have prevented, against an enemy which it might have made a friend and ally.

What are the relations of the new and the old ophthalmology? They are most intimate, sociologically and clinically. In a word, the scientific correction of ametropia prevents almost all inflammatory and surgical diseases of the eyes—I should say about nine-tenths of them. It will not, of course, prevent the few ocular results of systemic disease, such as albuminuric and diabetic retinitis, optic neuritis, toxic amblyopias, etc., but such things are uncommon, and not seldom the systemic trouble had its individual grounding in morbid ocular function. The far greater proportion of all ocular diseases are those of the extrinsic muscles; inflammations of the conjunctiva, cornea, and iris; glaucoma; high and increasing myopia, and cataract.

As to the external muscles, there is now an almost unanimous agreement that heterophoria is due to uncorrected or miscorrected refraction anomalies, and that the plunge made into tenotomies, graduate, undergraduate, or postgraduate, was into a blind alley of error and waste which has done irreparable harm to true ophthalmology by making the professional and lay world suspicious and even contemptuous. The heterophoric trouble is innervational in nature and refractional in origin.

As to strabismus, the same truth is at last becoming manifest and admitted. A recent English book, Browne and Stevenson, on the "Squint of Children," is a striking proof. Get glasses on the child early enough and there will be no squint. Even when the fatal delay has been negligently permitted, the operation does not do away with the necessity for the spectacles, and there are some of us "extremists" who contend that the operation is of little or no good even at the late date.

With the exception of relatively few cases, due to trauma, infections, malnutrition, etc., conjunctivitis and keratitis are of eyestrain origin. When one sees a few thousand cases of spontaneous recovery after the patients get proper glasses the truth needs no further mention.

As to iritis and glaucoma, did any skilled refractionist ever see the disease appear in eyes which for years previously had been fitted with right correcting lenses? It may be that such cases occur, but observation shows that the eye which is morbidized by eyestrain has such low resisting power that only a slight inciting cause is needed to develop the otherwise powerless hint.

Concerning retinal and choroidal diseases, it is also a truism that they are usually caused by the ciliary strain of uncorrected ametropia. The "woolly," hyperemic and suffering retinas, the "pepper-and-salt," unhealthy macules, the abnormal pigmentations, noted ophthalmoscopically as the result of long-continued eyestrain, are suggestive and characteristic.

There is one refraction-anomaly, high or malignant myopia, which is the direct consequence of disease of the eyeball. Does anyone now doubt that this, the stretching or stretched eyeball, is the result of ametropia? If so, he should go to Germany to live. And why does the lens so often grow opaque in the old? Why, it would be better asked, does it grow opaque toward the end of presbyopic failure? The suggestion comes that it is at least partly because of the denutritive conditions set up by the severe strain of presbyopia added to that of pre-existing ametropia. This theory derives clinical support from the fact that cataract does not arise when the eye has been kept in an optically correct, healthy and physiologic condition for twenty years before the cataract-age.

And thus the good American motto, *e pluribus unum*, applies to ophthalmology as well as to statesmanship. In the many diseases of the eye, there is at last but one disease. There was plainly an overhasty recourse to surgery when the surgical disease could have been prevented. As has been well said, an ancient hunger for the miraculous has come down to our times and to our medical science, and operation is the modern medical miracle.

At last we have begun to see that prevention is better than cure, and the ophthalmic surgeon is becoming the refractionist. In the same way the ophthalmic therapeutist is disappearing to return immediately as the preventor of disease, the keeper of good eyes good. Therapeutics is fast merging itself into prophylaxis, and the practitioner of medicine is becoming the hygienist. It is a sort of benevolent suicide of the old ophthalmologist for the benefit of his heir, the well-insured new young man. It is fortunate that the new and the old science are in reality carried on in America by the same practitioners so that no rivalry nor ill will can take place. For a time, to be sure, the dual ophthalmologist may privately discuss with his conscience the question as to whether he will undertake to prevent the strabismus of the little one, and the cataract of the presbyope, or operate later, etc., but in this and many other similar instances I do not contend that the old ophthalmologist is Mr. Hyde, although I am sure that the new one is Dr. Jekyll.

The unity of the organism and the interdependence of all functions is the dominating and moulding truth of medicine, the monism of physiology, the evolution principle of medical science and practice. No organ lives to itself alone; there is no function that does not influence every other. This is the truth which disallows a narrow specialism, prevents the exaggerator from becoming an extremist, and forbids the extremist from becoming a hobby-rider. In obedience to it the specialist must always be on the sharp lookout for all the lines of cause and effect which may subtly run back and forth, either way, between the diseases of his chosen

field of study, and that of all the other specialists. We are, in truth, all of us, specialists nowadays, the general physician fully as much so as any other. While knowing profoundly one specialty, as willy-nilly we now must do, it is our common duty to maintain a keen outlook over the work of others and preserve a large sanity of mind, and a genuine sympathy of feeling with our colaborers in all other fields. The direction to speakers at this meeting is to choose out and emphasize the relations running between their specialties and those of others, between one science and the other sciences. We are to bind into unity, or preferably discover the number and nature of the existing bonds, which make the organism one and its parts interdependent, and which resolve all organisms into a universe.

The relations which exist between refraction anomalies and general medicine are almost solely of one kind—those, namely, in which the ocular condition is causal. There are few bodily conditions or diseases that influence the ametropia.[1] Large changes in general body weight, I have demonstrated, do so, a decided increase of fat tending to lessen the anteroposterior diameter of the globes; an extensive decrease of fat, conversely, lengthening the eyeballs. I have also noticed that after a severe illness refraction changes will probably be found. Other illustrations may be omitted.

When one turns to observe the number of organs and ways in which eyestrain results in extraocular disease, there is at once, of course, a recognition that, compared with direct ocular reflexes, they are few. The eye and ear have extremely few, if any, interdependencies, and they are relatively unimportant. And yet an expert might write an interesting monograph on the subject. One would say that the dentist and oculist had little in common, and yet I have had more than one patient who had violent toothache in sound teeth whenever he read or wrote five minutes.

The specialist in diseases of the upper air passages must never forget the oculist. It is a significant fact that eyestrain patients locate their headaches directly in or behind the frontal sinuses. We list them as frontal, but understand thereby that the forehead is the location of the pain. For many years I had noticed that there was a suspicious relation between eyestrain and frontal-sinus disease, and in several patients I had definitely traced it. Dr. Phillips of Buffalo has made a close study of ten such cases in which the sinus disease was clearly due to eyestrain.[2] Reflex congestion of the upper air passages, pharyngitis, laryngitis, aphonia, common colds and influenza, may be due, and more frequently than is supposed, to eyestrain.

In general surgery nothing, a short time ago, would have seemed more absurd than to say that eyestrain could at least prevent appendicitis, surgical diseases and operations. Yet Dr. Robert T. Morris of New York,[3] whose character and professional standing need no setting forth, writes as follows:

> A very large group of cases of intestinal fermentation is dependent on eyestrain. These cases are perhaps quite as often overlooked as any others, but as soon as we have all become familiar with the external signs of eyestrain fewer cases will get to the surgeon with the diagnosis of abdominal disorder. Those that I see are sent to the office most often with the request to have the appendix examined, because the distension of the cecum is apt to cause more pain than distension of other parts of the bowel and attention is attracted to this region. If there are external evidences of eyestrain these cases are referred to the ophthalmologist, along with my cases of "nervous dyspepsia" and "gastric neuralgia," and some of the most brilliant results that I have observed in any kind of medical practice have come out of the treatment that was instituted.

If an oculist had first made such a statement the grin of derision would have extended across the face of the continent. Because the general surgeon thus annually turns away from his office thousands of dollars' worth of operations, it derives at least the merit of unselfishness.

There is no truth in medicine more certain and demonstrable, although the gastrologist has not heard of it, than that eyestrain produces anorexia, denutrition, intestinal fermentation, constipation, and many disorders of the digestive organs, including, especially, the liver. If so, it is, of course, admitted that the surgical diseases secondary to such disorders may be ocular in remote origin, and the warning may not in future be safely unobserved by the appendicitis specialist, the gastrologist, the gynecologist, etc. Within a year a famous medical journal has editorially stated that all obscure gastric symptoms demand the excision of the gastric ulcer. That is, surely, surgery gone mad.

In orthopedic surgery a new causal relation has most recently been discovered between eyestrain and spinal curvature. Scoliosis begins in childhood and adolescence as spinal curvature, and in thousands of patients the spinal disease is unsuspected by child, parent, and doctor. Within a few months I have discovered 30 or 40 cases of tilted heads, most of which caused or might cause secondary or compensatory scoliosis, and all due to an axis of astigmatism (about 15 degrees unsymmetric, and to one side of 90 degrees or 180 degrees in the dominant, that is, the dextral eye in the dextromanual), which compelled a habitual lateral inclination of the head in order to see plainly. And the compensatory curvature of the spine induces a score of other systemic diseases. We formerly allowed our patients to tilt the head while making refraction tests, and so missed locating the astigmatic axis correctly.[4] By keeping the head vertical during the testing we now apply glasses that keep it straight afterward, and when the spinal curve is still functional we likewise straighten it by glasses alone.

No pediatrist henceforth may forget the eyes in all of his patients over 18 months old. The chances are high that, without other definite and easily ascertained cause exists, eyestrain is the source of the mischief in the child which suffers from night-terrors, breakfast anorexia, tics, chorea, nervousness, disorders of digestion and nutrition, irritability, headache, etc. I have cured nocturnal enuresis in children by spectacles alone. Alert-minded pedagogists are fast becoming aware of the tremendous rôle of eyestrain in the health and success of their pupils. As every year of school life passes the proportion of diseased pupils increases, until in the upper grades it may rise to 60 per cent.; it is 40 per cent. on the average in Columbus, Ohio. The diseases are precisely those which every capable oculist knows are often due to eyestrain. The rule is so certain that discerning teachers know that

1. Although one well-known neurologist and one orthopedist have said that the eyestrain is a result of the systemic disease, rather than the reverse—an amusing betrayal of a lack of knowledge of what ametropia is!
2. American Medicine, 1904.
3. Medical Record, Dec. 26, 1903.
4. An excellent rule of ophthalmic office practice is that when we fail to cure eyestrain results by our glasses, it is perhaps because we have allowed the head-tilters to hold their heads as they pleased during the tests.

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those pupils who are one, two, or three years behind their classes, have severe eyestrain, and without further inquiry they are sent to the oculist. There is hardly a page of that magnificent book on "Adolescence," by Dr. G. Stanley Hall, that does not need rewriting with this new knowledge—unfortunately and strangely ignored—in the mind of the writer. Its splendid power and truthfulness could have been doubled had its gifted author looked into the vast existing literature, written by capable and scientific minds, confirmatory of the rôle of eyestrain in school life.

In neurology there is almost no limit to what the refractionist may justly claim. And posterity will allow it, although the neurologist of to-day is unconscious and contemptuous of the truth. Neurasthenia and hysteria he claims as his exclusive possession.

Private sanitariums or rest-cure establishments may be of limited and infrequent service for chronic patients whose vitality and resisting powers have been worn to a thread by a half-life of torture for which no therapeutics availed. But even the ordered rest-cure could often be avoided by correction of eyestrain, and in perhaps 75 per cent. of cases the neurasthenic breakdowns and chronic hysterias could have been prevented by attention to the matter in adolescence. Not infrequently it is plain that the resting is curative because the eyes are rested. With reading and writing interdicted there are often astonishing cures; with resumption of reading and writing, relapses and returns to the sanitarium are required.

Every sensation and its every correlated motion is an example of reflex action, and yet there are those who airily scoff at the very possibility of reflex neuroses, and other diseases due to reflex action. There are those who speak scornfully of mysticism and mystery in medicine, while satisfied with a practice which reduces itself to diagnosis and naming unknown mysteries as migraine, neurasthenia, hysteria, psychosis, etc.

Psychiatry seems to have reached the goal of its ambition. Diagnosing and naming a morbid mental condition as "a katatonic state," "major psychosis," "melancholia of involution," "psychical tonus or contracture," "dementia precox," "*forme fruste*," "manic depressive insanity," "confusional psychosis," "pseudoneurasthenia," "mysophobia," "topoalgia," "neurasthenical syndrome," etc., all of which terms are culled from one short article, seems to end in the air so far as bettering conditions. Logomachy does not help. Who has examined the refraction of the insane? What patient with extreme eyestrain or migraine has not feared insanity? The sanest of men, Parkman, was pronounced insane, and so was Wagner and others, by great authorities, at the climax of their sufferings. Was not Nietzsche's "atypical paralysis" intimately connected with his most evident eyestrain? A competent oculist finds the majority of the young criminals of the Elmira Reformatory afflicted with so high a degree of ametropia as to make study, reading and writing and ordinary handicrafts impossible. What else could many of the poor boys do but play truant and steal? The statistics showing the relation of crime to truancy indicate that some of both may be due to bad eyes.

In 252 cases of suicide, 187 were due to ill health. About 50 per cent. of chronic epileptics have unsymmetric astigmatism and anisometropia—a surprising ratio of a defect especially prone to upset the cerebral health and balance. The peculiarity of the diseases of eyestrain is their tendency to produce psychic and emotional disorder, despair, melancholy, etc.

There is scarcely any disease which the general physician or internist is called on to treat that may not be and that frequently is not due to or influenced by eyestrain. The commonest is designated by that silly and meaningless word, migraine. The term has little or no significance nowadays. It is, in fact, the vulgarization of a misnaming and meaningless designation of a malobserved and trivial symptom, which in the majority of cases is not present, of a widely prevalent and ingravescent disease, with indescribable symptoms, which may, in extreme cases, wreck life and morbidize the mind, the etiology and pathology of which are unknown, the location or organs affected being also unknown, and of which no treatment avails. It is made to cover the conditions indiscriminatingly called scotoma scintillans, headache, sickheadache, gastric and intestinal disorders, insomnia, melancholy, etc.; in a few severe cases such patients have all of the symptoms. It is almost always due to eyestrain, and, except in the rarest worn-out chronic cases, it is almost immediately curable by relieving the eyestrain. It is the commonest of all affections, the great manurer of the ground for other and terminal diseases, the supporter of quacks and patent-medicine syndicates. From 10 to 20 per cent. of Americans suffer from it, under one alias or another, recognized or unrecognized. The larger number of these, taught by sad experience, have given up the hope of cure, and they are neighbors of the person who says migraine has no relation to eyestrain, and who does not know that thousands are now being cured by two little pieces of glass. Eyestrain effects have a peculiar tendency to periodicities and waves of better or worse. The nervous centers can endure for a time the burdens and irritations laid on them, but at last give away. This is so of mental states and diseases, and the eye as psychologists know is the chief creator of intellect. Hence those diseases or symptoms when not dependent on organic disease, like headache, sickheadache, fickle appetite, the paroxysmal neuroses, cardiac palpitation or irregularity, chorea, epilepsy, neuralgias, insomnias, and colds, which exhibit such waves of exacerbations and depression, may be due to ocular irritation.

A key to many mysteries of disease might be found in a careful classification of such as have increased with civilization as compared with those conditions outside which have been changed during the progress of civilization. Among these changed conditions none can be more noteworthy than the new kind of labor, and the tremendous addition of the amount of it thrown on the eye by the printing press, schools, sewing, clerical, and urban life. No other organ has been subjected to such a change of work and stimulus, and in all other functions the same kind of work is now demanded as before. The eye, however, was brought into function to use in distant vision, and if for near, for but an instant. Osler says that dyspepsia is the besetting malady of this country, due to improper diet, etc., although modern food is many times more certain in amount and good in quality than ever before. It is certain that stomachic and nutritional diseases seem to have increased inordinately. What is the cause of this contradiction? One, surely, is eyestrain, which is extremely prone to upset the digestive function. See several thousand cases of nausea, "dyspepsia," loss of appetite, constipation, etc., relieved at once by glasses, see the disease return at once when the glasses are broken, a lens reversed in a frame, or when the refraction changes, and one recognizes the fact of the

interrelation. Allied to this class of cases are those in which the keen ophthalmologist detects more than hints that renal affections, hepatic ones surely, including gall-bladder diseases, may possibly be set up or aggravated by severe reflexes from the eyes to the secretory and eliminative organs. Some day it will be established that eyestrain is a large factor in the production of diseases of the kidney.

One of the more subtle but still easily recognizable methods in which eyestrain works perniciously is by a slow and general denutrition and reduction of mental and physical vitality whereby the resisting powers of the system are reduced to such a degree that it becomes the easy prey of infections, and of general and terminal diseases. This makes eyestrain a factor in the tuberculosis and pneumonia crusade. The life study of patients and their diseases—the biographic clinic—will make such a connection more often manifest. The sad story of the life of John Addington Symonds is in this way suggestive.

The age-long superstition whereby almost all the diseases of women were traced to the sexual organs and functions,[5] is fast giving way to a new view more in correspondence with facts. That puberty and menstruation should inaugurate a host of terrible evils, and the menopause another legion, is at the least contradictory. The proper name for the cause of many supposed disorders of menophania and puberty is study with astigmatic eyes; that for supposed menopausal woes is presbyopia. In a large number of instances ὀφθαλμός may replace ὑστέρα as the organ primarily at fault. The oculist and gynecologist should be good friends. The connection between the eye and sexualism is known of old, and is a deep and profound one. Love of any and all kinds dilates the pupil, the designation of the grand sympathetic system itself arising from the fact. A certain profound relation of vision and sexualism will sometime be established which as yet is unsuspected.

Justly motived, therefore, is the question: Why has this great truth been so long ignored, and why now do so many reject it? Some of the answers are these:

1. The progress of science has not yet reached the stage that will enable certain minds to see its truth.

2. The conditions of life and professional evolution have made surgery of supreme importance.

3. Organic diseases had first to be studied.

4. The laws and status of infectious diseases had first to be made definite.

5. A mere habit of neglecting the eye and its all-important function and diseases has with some grown into a blind dogmatism.

6. The theory of optics, and the elaboration of mathematical formulas, satisfied too many minds, and there was no proceeding to the practical application in clinical work.

7. Specialists in medicine, other than ophthalmologists, have overstated the effects of the diseases of special organs.

8. The ophthalmic tenotomist has made unwarranted claims and so made the profession blind and deaf to the warranted claims of the refractionist.

9. The commercial medical journal plays to the galleries, and flatters the prejudices of its readers.

10. Patent medicine venders, drug-sellers, and quackery within the profession carry on the irrational tendency.

11. Suffering and pain are positive, relief and cure negative. The patient, therefore, is prone to forget the primary misery, nor does the physician recognise the cause of the cure by glasses, which is ascribed to fate, *gale répercutée*, the doctor and his drugs, etc.

12. The method of eliciting symptoms and of clinical note-taking is so faulty that the very existence of the chief symptoms of eyestrain is not recognized. The patient thinks the vomiting, abdominal symptoms, migraine, headache, dyspepsia, insomnia, loss of energy, etc., have no possible connection with the eyes, does not allude to them, and they are thus wholly ignored. Thousands of such have been cured by glasses, and the fact unsuspected by either physician or patient. In another, less large, number of cures the method of cure is known or suspected by the oculist, who is silent concerning it because of the desire to "stand well with the profession," or to secure reference cases from those physicians and neurologists who disbelieve in the "extremist" and all his work.

13. The desire for consultation practice, referred cases, professorships, hospital positions, and "success" make the cunning silent or conservative. "Faddism" and "hobby-riding" charged to a budding reputation are ruinous.

14. Poor refraction work on the part of oculists is the greatest cause of scepticism. Those who do accurate refraction know perfectly well that, broadly speaking, the ophthalmologists of the world have done their refraction work badly. The logical and pathologic conclusions of the labors of Donders, Helmholtz and others have been practically made only by some American, and one or two European, refractionists. "I sent my patient to the oculist and glasses had no effect on the disease," means utterly nothing. "Is not my oculist a man of the highest renown and ability?"—may mean as little. Does this man of renown and ability teach, and in the persons of his patients demonstrate that so-called "migraine," headache, sick-headache, dyspepsia, spinal curvature, insomnia, neurasthenia, anemia, the blues, and the rest of the list, are often, very often, due to eyestrain? Belief in the truth is a prerequisite of ability to cure; and is absolutely essential to a rigid attention to at least "78 reasons why glasses failed to give relief." From 50 to 75 per cent. of glasses prescribed in the world are inaccurate and can not relieve eyestrain. Then it is also true that fully 90 per cent. of the adjusting of opticians is so bad that any possible therapeutic result is not obtained.

To be entirely frank one should add an argument which is, indeed, a two-edged sword, but which needs occasional use to keep it from rusting. It is this: Those who deny that migraine and the many other diseases mentioned may be due to eyestrain have not of course cured such patients in their own private practice. That is a self-judgment which is most severe. Those on the other hand who claim that such diseases are curable by ametropic correction, unless utterly unprofessional, must have cured such patients. If they do not cure they would surely be soon found out and their reputations and practices ruined. They seem to prosper! I heard one astute oculist say that if this absurd skepticism continued a few years longer his fortune would be made. He is very "successful" and is conducting his work in an honorable manner. The enthusiasm and gratitude of a patient permanently relieved of the tragedy of "migraine" or "neurasthenia" is irrepressible.

5. A sad error that much mars the large sanity and lessens the benefits of Dr. G. Stanley Hall's great book.

A corollary is that refraction is not taught, there is not a single adequate and thorough-going school wherein may be taught, or wherein there is any outfitting, or attempt to teach, this most skilled, most infinitely subtle and difficult art and science. Two years at least of study, daily, exclusive study and practice, after the general course in medicine, under expert teachers, and on the part of the best type of student minds, is a too short period to introduce a man to the work, and to legally justify him in entering on such specialist practice. An endower and maker of such a school would do the world a greater service than either Carnegie or Rockefeller have so far dreamed of doing.

(To be continued.)

DIFFERENTIAL DIAGNOSIS BETWEEN PSEUDOMEMBRANOUS ANGINA OF SYPHILIS AND DIPHTHERITIC ANGINA.

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A positive or correct diagnosis of these two conditions should be made at the earliest possible moment, lest a serious, not to say a fatal, mistake be made, and every means to surmount the difficulties which lie in our way should be conscientiously employed and thoroughly exhausted. That the clinical picture may lead us to error is sufficiently proven when we see such authorities as the elder Fournier, the world's most prominent syphilographer, an acknowledged authority of pre-eminence, err in his diagnosis by relying too implicitly on, as he supposed, a well-established clinical picture.

Bacteriology has made possible the study and classification of the pseudomembranous angina; has demonstrated their different varieties, and placed at our command an almost, if not quite, certain means of establishing a diagnosis. The physician meets with many conditions which present an almost identical picture, both macroscopically and microscopically, but which are due to vastly different causes. Most of the infectious diseases of the buccopharyngeal cavity may manifest themselves by pseudomembranes. Buccopharyngeal syphilis and diphtheria, particularly, may cause the formation of false membranes, the appearance of which are identical. The lack of knowledge on this point, and the failure to consider the same, is responsible for the errors of diagnosis recorded in our medical literature. In our textbooks very little stress is laid on the importance of a correct differential diagnosis between these two conditions, and on what may be the result of our error in not exhausting every possible means to clarify our diagnosis. On the one hand, we may expose many to the known contagion of diphtheria, and, on the other, we lay the attendants and perhaps other patients open to the possible infection of syphilis.

Due perhaps to secondary infection, the syphilitic localization on the buccopharyngeal cavity is not always apyretic. A chancre of the tonsil may assume a pseudomembranous appearance and be accompanied by well-pronounced general phenomena. In some cases its onset is presumably sudden, but, as a rule, it is slow in making its presence felt. It is frequently accompanied, however, by a rise of temperature to 100 F. or 102 F.; rapid pulse, anorexia, dysphagia, foul breath, anemia and marked depression or fatigue. And just here it might be well to remark that too much importance must not be placed on unilaterality (or the lesion involving but one side), for the reason that in the secondary period or stage of syphilis, when pseudomembranes form, they often involve or cover both tonsils, the pharynx and uvula. When such a pseudomembrane is removed, a bleeding and ulcerating mucosa is disclosed. In these cases we always have glandular enlargement present.

Our diagnosis should always be based on the results obtained from culture tests, and some little consideration be accorded the personal history, as we do have cases in which we have both the diphtheritic and syphilitic infection manifest at the same time in one individual. When this double infection does occur, our first duty is to destroy the Loeffler bacillus infection, and subsequently direct our attention to the syphilitic. A third element which may enter into the differential diagnosis is the angina produced by Vincent's fusiform bacillus, which also at the beginning presents symptoms similar to those of diphtheria.

This infection, however, can be readily recognized by the aid of the microscope. Just here, before citing some cases in point, allow me to insist on the use of the microscope, and the necessity of making cultures in all cases of pseudomembranous affections of the mouth and throat.

Fournier's case—that of diphtheria mistaken for syphilis:

Case 1.—Child (whose father was known to be syphilitic), was admitted to the Hospital Saint Louis, suffering with a membranous affection of the throat, and presenting an undoubted syphilitic eruption on the body. The patient grew rapidly worse, and twenty-four hours after the diagnosis of syphilis had been made diphtheria was suspected and positively diagnosed. The patient died promptly of diphtheria. This, however, was before the introduction of antitoxin, the use of which, had it been known, might possibly have brought about a different termination.

Petges[1] reports the following cases:

Case 2.—Diphtheria mistaken for syphilis.

***History.*—Male patient, a hussar in the Tenth Regiment, Bordeaux, presented himself for medical examination. An indurated chancre which had been present between two and three weeks was found in the balanopreputial folds. This appeared sixteen days after an intercourse.**

***Examination.*—Secondary manifestations promptly appeared, and on Jan. 6, 1901, mucous patches appeared on the tonsils. Notwithstanding energetic anti-syphilitic treatment the patient became anemic and rapidly emaciated, the pharyngeal lesions increased and membranes formed. Diphtheria having appeared in a few members of the regiment, the possibility of this being a case was considered. January 16 dysphagia was noted to have increased, and the temperature had gone up to 100.5 degrees F. January 18 the patient's general condition had grown more alarming, and on January 19 he was placed in the diphtheria ward and a culture made, which showed a pure growth of the Loeffler bacillus.**

***Treatment.*—Injections of antitoxin, 30 c.c. in all, resulted in the patient's recovery, after which anti-syphilitic treatment was energetically employed, with gratifying results.**

In this case, as you will note, we have the two conditions or infections existing at one and the same time.

Rouflay[2] reports another case of diphtheria likewise mistaken for syphilis:

Case 3.—Patient, male, artilleryman, aged 22 years. March 4, 1896, was admitted to the Hospital Fontainebleau.

***Examination.*—Examination revealed a marked secondary syphilitic eruption, with pseudomembranous patches on the**

1. Arch. de Med. et Pharmacie, 1902, vol. xxxix, p. 313.
2. Arch. de Med. et Pharmacie, 1896, p. 175.

fauces and pharynx, which also involved the larynx, producing difficulty of breathing. Rouflay suspected and suggested diphtheria as the probable diagnosis, but was overruled by consultants, and no culture was made.

Treatment and Results.—On the day following, however, the patient's condition became alarming and tracheotomy had to be performed.

The patient promptly died, and on postmortem examination the false membrane was found to have extended down into the bronchi, and cultures made from the larynx demonstrated the pure Loeffler bacillus.

Petges[3] reports the following case, in which a chancre of the tonsil, with syphilitic angina, was mistaken for diphtheria:

CASE 4.—Patient, male, was admitted to the Hospital St. Nicholas July 17, 1900. Denied all history of syphilis.

Examination.—Culture made the following day was negative in results as to Loeffler's bacillus, but showed abundant streptococci and staphylococci. The tonsils, uvula and the pillars of the fauces were covered with false membranes.

Treatment.—The treatment, consisting of antiseptic gargles, had no effect on the condition. July 30 marked atypical adenopathy was noted at the angle of the jaw on the left side. On account of the size of the ulceration, the atypical adenopathy, and the general condition of the patient, the physician was thrown off his guard as to syphilis, and thought the case one of tuberculosis of the tonsil. A general tonic course of treatment was instituted, and followed for about six weeks, without appreciable results. Finally, when the secondary eruption appeared, the correct diagnosis was made, and anti-syphilitic treatment was instituted, with gratifying results.

In December, 1903, I saw, in consultation with the family physician, a patient whom I had under treatment for syphilis.

CASE 5.—Male, 27 years of age; bookkeeper by occupation.

Examination.—When seen by me in December, 1903, he presented a pseudomembranous affection involving both tonsils, the pillars of the fauces and the uvula. Temperature, 101 degrees F.; rapid pulse and marked mental depression.

Treatment and Result.—The family physician diagnosed diphtheria, without making a culture, and injected antitoxin. No improvement having followed after ten days had elapsed, I was asked to see the patient, and made a diagnosis of syphilis, which the negative results of a culture made at this time and the results obtained from anti-syphilitic treatment proved to be correct. (Syphilis, four months.)

Guillemants[4] reports the following interesting case:

CASE 6.—Female patient was treated with anti-streptococcic serum for what had been diagnosed as chronic tonsillitis. After five or six weeks she was admitted to the hospital.

Examination.—Examination showed yellowish membranous patches on both tonsils, with well marked adenopathy.

Treatment.—Diphtheria was at once suspected and an injection of antitoxin given. A culture taken at this time revealed streptococci and staphylococci. No improvement followed the injection after a week's time and a second culture was made, and this time Loeffler's bacillus was found.

During this time the patient gave birth to a child, with unmistakable signs of congenital syphilis. The child lived but a few hours. The mother then acknowledged having had syphilis, and under anti-syphilitic treatment the membranes promptly disappeared and her recovery was rapid.

Numerous other cases in point might be cited, but my object in presenting this paper was not to enter into a résumé of the literature, or to advance any new theories, but simply to direct attention to the difficulties of differentiating these conditions, and the serious consequences which may follow as a result of an error in diagnosis.

3. Arch. de Med. et Pharmacie, 1902, vol. xxxix, p. 313.
4. Thesis, Paris, 1897. No. 257.

CONCLUSIONS.

In conclusion, I wish to emphasize the following points:

1. Pseudomembranous syphilitic anginæ are not rare.
2. The differential diagnosis of pseudomembranous syphilitic anginæ and diphtheria can not always be made from the clinical picture.
3. Culture tests and the microscope should be employed in all suspected cases.
4. In all cases in which we are highly suspicious of diphtheria, antitoxin should be used promptly while awaiting the maturity of our culture tests.

414 Marquette Building.

Clinical Reports.

COMPLETE INVERSION OF THE UTERUS WITH SUBSEQUENT REDUCTION AND RECOVERY.

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Patient.—Mrs. W. F. M., age 29 years, a farmer's wife, who had been delivered of a female child Feb. 10, 1902, was admitted to the Southwestern Hospital, Elk City, Okla., March 12, 1902.

History.—Patient's own statement: "I have always been stout and well, have given birth to three children, one aged 4, one aged two years, and the one just recently born. When my labor came on I sent for a midwife, Mrs. Hughes, my neighbor who lives near by, and when my child was born I was so nearly dead we sent for a physician, who came and said I had a large tumor, gave me some medicine and left the house."

The social and family history of this patient gives no information other than that she was without constitutional taint and had always followed a plain and simple mode of living.

Examination.—An examination, made at the hospital by Dr. T. E. Standifer and myself, March 12, 1902, thirty days after confinement, revealed a completely inverted uterus, filling up the vagina, from which exuded a bloody discharge of offensive odor. Patient complained of throbbing pains and there were marked distention and tenderness over the lower half of the abdomen with characteristic facies. Edema of the lower limbs; lymphadenitis, with inability to void the urine, accentuated the serious character of the illness. Temperature on date of admission 103, pulse 130, respirations 30.

Treatment.—From date of admission until discharged the treatment consisted mainly of supporting measures, such as highly nutritious food, baths and douches of hot creolin solution in the vagina. No attempt was made to reduce the temperature.

March 15, three days after entering the hospital, the gravity of the patient's condition, coupled with the unusual character of her illness, prompted Dr. Standifer to invite a number of his colleagues to examine the patient and to decide, if possible, the best course of treatment to pursue. Included in this number was Dr. J. C. Baker, Port, Okla., who saw the patient at her home February 12, two days after confinement, and who, recognizing her true condition, administered an anesthetic and attempted reduction of the inverted uterus, after Emmett's method, without success. At this consultation it was decided that, when the patient's condition would permit, another attempt to replace the inverted uterus should be made, and failing to effect a reduction, a vaginal hysterectomy should be proceeded with at once, while the patient was still anesthetized.

During the intervening period, from March 15 to March 25, when reduction was effected, the patient's condition remained practically the same, except as to the improved character of the vaginal discharges and the physical evidences of improve-

ment due to the more acceptable regimen supplied at the hospital.

Operation.—March 25, forty-three days after confinement, having decided we could not gain more by waiting, and the patient having already been prepared by baths and douches for as nearly an aseptic operation as possible, Dr. T. E. Standifer, with his unaided hands, one molded into a cone shape, the other pressing the cervix through the abdominal wall, succeeded, after an exhausting effort of fifty minutes, in reducing and replacing the inverted organ.

After-treatment and Result.—The patient recovered fairly from the anesthetic, but suffered from severe shock and complained of cutting pains in the lower abdomen. Both pain and shock were believed to have resulted from the breaking of possible adhesions between the peritoneal surfaces. As some degree of infection would seem almost inevitable, we were not surprised, a few hours later, to find the patient with an accelerated pulse, 140, and a temperature of 105.6. This high temperature remained nearly stationary for twenty-one days, during which time the most constant and careful attention was required to sustain the patient.

Practically the same treatment was followed after replacement as before, with the addition of intrauterine irrigations of a 2 per cent. ereolin solution for a few days only.

After passing the long period of high temperature, iron was cautiously administered for the toxemia without noticeable good effect.

A slow and not very satisfactory convalescence of some weeks found the patient without funds, but, as she thought, sufficiently improved to leave the hospital, which she did May 10, 1902.

Nov. 5, 1903, eighteen months after leaving the hospital, I visited the patient at her home, found her physical health good and ascertained that her pelvic organs were performing their perfect functions.

COLD-AIR TREATMENT IN TETANUS.

W. J. McCRANN, M.D.
SOUTH OMAHA,
AND
CHAS. C. ALLISON, M.D.,
Professor of Surgery, Creighton Medical College.
OMAHA.

Patient.—F. McK., aged 10, was first seen Sept. 5, 1904.

Examination.—His symptoms were those of tetanus and on examination we found a splinter in the bottom of the left foot. The history was that the splinter had been in the foot eight days. This was removed and tincture of iodin applied to the wound, which was suppurating slightly.

Course of the Disease.—At this time and during the two following days the muscles of the neck, back and abdomen were rigid, respiration was difficult, moderate opisthotonos was present and he complained of pain in the head and stomach; convulsive movements appeared when he made an effort to move or talk. Two doses of anti-tetanic serum were given hypodermically and he was placed on full doses of chloral and bromids. The symptoms grew progressively worse during the first three days of our observation, when it was decided to employ the cold-air treatment, which had been suggested by Dr. McCrann, whereon he was taken to the cold-storage room of a local brewery, his symptoms being so severe as to make the outlook most discouraging.

Cold-air Treatment.—He went into the cold-air room at about 8 o'clock p. m.; within two hours the symptoms had improved in a marked degree and he rested well until about 2 o'clock in the morning, when he awoke, and on account of his being frightened at the unusual surroundings his parents took him home. During the following day, when at home his symptoms grew much worse, opisthotonos was very pronounced, respiration difficult, convulsions more frequent, during which his tongue was severely bitten. He was unable to take any nourishment and his temperature reached 103 degrees. The prospects seemed altogether bad, and it was doubtful in our minds whether he would again be able to reach the brewery, which was twenty blocks away.

Results.—On readmission the symptoms again improved, and his complete recovery was uninterrupted. He remained in the cold-storage room for seven days, and in an adjacent building for the remainder of a week, after which he went home.

Remarks.—While in the cold-storage room his body was at all times well protected with blankets and rubber cover. The most noteworthy features of the case, in our judgment, are the following: This was an undoubted case of tetanus of severe type, which seemed not to respond to the usual treatment, but which showed good improvement after a few hours of inspiring cold air, with a recurrence of all the bad symptoms when he returned home. The symptoms became alarming during the fifteen hours he remained at home, and prompt progressive improvement followed readmission to the cold air. So pronounced was the change that it would seem altogether reasonable to look on this plan of the application of cold as very useful, and we would advise its further trial.

New Instrument.

A NEW NEEDLE FOR USE WITH THE McGRAW ELASTIC LIGATURE.

S. EDWARD SANDERSON, M.D.
DETROIT, MICH.

This needle has the following advantages: It is simple in construction, being all in one piece (Fig. 1); the diameter is small, the size, 3 mm., will hold a ligature of 5 mm. diameter;

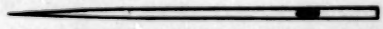

Fig. 1.—Three-quarter size.

it is of convenient length, 4½ inches; as it is to be threaded by the operator or his assistant, it can be used any number of times; although the needle is designed in different sizes for different sized ligatures, yet, by tapering and trimming the ligature and then threading single or double, one sized needle may answer for all sizes of ligature.

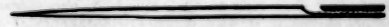

Fig. 2.—Sectional view, three-quarter size.

The end of a large ligature can be tapered so as to pass far enough through to be grasped and then drawn through beyond the tapering point, which is cut off. The compressed end is held by the grasp of the needle (Fig. 2). A smaller ligature can be threaded by the use of a loop of braided silk or other strong cord, pulling the ligature through double. The loop of

Fig. 3.

silk should be passed in through the hole on the side, made to emerge far enough to loop the ligature through it, when sufficient traction is made to lessen the diameter of the ligature and draw it into the end of the needle far enough to hold when the thread should be cut off (Fig. 3). See illustrations.

315 Stevens Bldg.

Morphin in Shock.—*The International Journal of Surgery* states that morphin should never be administered to a patient who is unconscious or in whom pain is abolished through shock, as it will deepen these conditions and will distinctly increase the danger.

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THE ABUSE OF CLIMATIC TREATMENT OF TUBERCULOSIS.

We are gradually abandoning the idea that the care of tuberculosis is dependent on certain climatic conditions. Experience is proving that abundant food, fresh air and rest are the essentials of such a cure, and that they can be applied in practically all climates. Yet in the minds of many, both medical men and laymen, the idea still survives that certain places have an almost magic effect on this disease, and that if the tuberculous patient can only reach one of the famous resorts of the West and Southwest, he will get well without anything else being needed. It is certainly true that a sojourn in a dry, fairly equable, sunny climate, in the open air, with abundance of food and freedom from mental worry or hard work, constitutes the ideal treatment for a consumptive, but if all the other elements are left out and the climate alone remains, the chances are enormously against any benefit being derived from a sojourn in any health resort, while the same amount of money expended in home treatment might result in cure.

The Carolinas, California, Colorado, Arizona and New Mexico, as any physician in these states will testify, are filled with pitiful wrecks of humanity, who should never have been allowed, much less encouraged, by their physicians to leave home in the late stages of tuberculosis, with no prospect of being able to obtain proper treatment after their arrival at their destination. Too often their slender resources are exhausted by the long and expensive journey, and they are forced to look for some light work to support themselves. But for every opening of that sort there are numerous applicants, the wages paid are low, as is always the case under such circumstances, and the patients, beside, are often in a condition when work of any sort is contraindicated. Unable to pay much for their living expenses, they take rooms in cheap lodging-houses, where precautions against infection are not enforced, and get their meals in cheap bakeries and restaurants. Add to this, homesickness, forlorn surroundings, loneliness, worry over money matters, lack of proper medical care, and no one will claim that the climate, admirable as it is, can do much for them. These cases literally throng the health resorts throughout the West. Tent life and sanitarium life are expensive, all the necessities of life are high, and the person of moderate means, even if he is assured of a steady income, will be obliged to makeshift to reduce his expenses, and often will be obliged to manage without the comforts he is accustomed to at home, and with an amount of "roughing it" which, to many people, is absolute misery. Nor is the loneliness of the life a negligible factor. A patient who can go accompanied by his friends is fortunate, but a woman who has had to leave a family of small children behind her will pine in spite of all treatment. The lack of home restraint and of healthful amusements works the ruin of many a young consumptive sent out alone to the far West and finding his only acquaintances and amusements in saloons.

This horde of hopeless cases, dumped on those of our states which have become famed as health resorts, constitutes the greatest problem with which the philanthropic associations in those states have to deal. Mr. Frank D. Witherbee,[1] who has had experience as a charity worker in Philadelphia and New York, has recently investigated conditions in Phoenix, Arizona, a typical health-seeker's town, and as a result, calls on the medical profession throughout the country to do all it can to prevent the "inexcusable stupidity which sends these people hither to die friendless and alone." Phoenix has a population of 15,000 to 16,000, almost one-fifth of whom are health seekers, and of these, 3,000 or 4,000, fully two-thirds, if not four-fifths, should never have been allowed to leave home, according to the opinion of the physicians in Phoenix interviewed by Mr. Witherbee. The hospitals, sanatoria, and almshouse are filled with indigent, dying consumptives. Public and private charity is taxed to the uttermost, but the demand is so much greater than the supply that many a wretched patient dies alone and unattended in a lodging-house. The supervisors of the poor say that three-fourths of the money expended on the inmates of the almshouse goes to alien consumptives.

Our knowledge of the proper treatment of tuberculosis has increased so enormously of late years that there is no longer any excuse for this blind, indiscriminating method of shipping out West consumptives of all classes in all stages of the disease. Rather let us reserve that treatment for the favored few who have ample means, and for the others let us direct our energies, in the first place, to the providing of sanatoria in our own states; sanatoria for those of small means and for those of no means at all. In the second place, and this is even more important, let us endeavor to devise methods of home treatment for tuberculosis, for this is the only way in which the modern treatment for that disease can ever be applied to the great majority of its victims.

THE CHEMICAL THEORY OF CERTAIN INFECTIOUS DISEASES.

We are so thoroughly imbued with the idea that all infectious diseases are caused and carried on by living germs that we are hardly in a fit mood to receive kindly

1. Charities, Nov. 6, 1904.

and weigh carefully any other theory of infection. In view, however, of the fact that modern microbiologic methods have not yet unraveled the etiologic problems of many easily communicable and highly infectious diseases, such as the acute eruptive fevers, syphilis, typhus fever, yellow fever, rabies and foot-and-mouth disease, we may do well to seriously consider the question whether a too strict adherence to the microbic theory of infectious diseases is closing our eyes to other methods of research. Have we really the right to irrevocably conclude that living, multiplying microbes are absolutely essential for the development and spread of diseases like those just mentioned?

Benjamin Moore, professor of biochemistry in the University of Liverpool, points out in a suggestive paper[1] that there is no proof in the observed facts regarding infection "that the infective agent is necessarily a living cell." He argues in favor of the alternative view that infection may be carried also by nonliving chemical substances, such as enzymes. But how can enzymes fulfill requirements in this relation that we heretofore have believed could be fulfilled only by living things? We believe to-day that the unknown "virus" of yellow fever is living because it reproduces itself in so evident a manner. Moore acknowledges that we have no evidence of the reproduction of enzymes, so far as their fate may be studied in the test-tube, but are we, on this account, permitted to conclude that in the living cell, with its varied chemical processes, there may not be energy enough to lead to a regeneration of an infecting enzyme or chemical substance? Hardly. Moore turns to the phenomena of autocatalysis for analogy. In autocatalysis action proceeds very slowly until the products of the reaction accumulate and give the reaction increasing speed, so that, in some cases, it may finish with explosive vehemence. When copper or mercury are placed in contact with pure nitric acid, there is at first no action; but as nitrous acid develops it acts as a catalyzer, increasing the velocity of reaction and its own production at the same time. If nitrous acid is added in the early stages, the action is at once hastened. Similar autocatalytic reactions lead to the explosion of gun-cotton; and so there may be abnormal cellular reactions, autocatalytic in character, producing bodies identical with those that start the reaction. In this way, hypothetical chemical "virus" may increase in amount and spread not only throughout the body first "infected," producing in this passage the clinical picture of the disease, but pass also to other individuals in whom the process would repeat itself.

It may be pointed out that many chemical substances, especially enzymes, are radically changed by treatment with the heat, and the disinfectant agents employed to destroy "virus" of various kinds, so that we are not able by these means to distinguish between living and nonliving substances. Moore, on the other hand, urges the great resistance of vaccine virus to various disinfecting agents—glycerin, sodium biborate, boracic acid, carbolic acid, chloroform—as evidence of the chemical nature of this particular virus, because it remains potent after exposures of weeks and months to these agents in such proportions that they kill all germs demonstrable by present methods within a few days. Finally, he also points to the fact that among the diseases of unknown etiology here considered are the most highly infectious diseases known, and he suggests that this great infectivity may be dependent on the minute subdivision and the stability of the infecting material if of chemical nature.

Professor Moore's chemical theory of certain infectious diseases contains much that is plausible. Particularly interesting is the use he makes in its elaboration of autocatalysis, which may be regarded as its cornerstone. As yet the theory is without experimental proof. The fact that vaccine virus remains potent after long treatment with disinfectants does not positively exclude its being living material, because we know that bacterial spores, for instance, have a powerful vitality. And microbiologists if pressed would not be slow to point out that Professor Moore has not brought forward any new facts that do not harmonize with the microbic theories of infectious diseases. Fortunately, there are in this class of diseases those that affect animals and with which it is possible to make experiments freely, and it may be hoped that the chemical theory, as advanced, will lead to experimental studies from the chemical point of view. In this way the theory may prove itself of great service.

1. The Journal of State Medicine, April, 1904.

THE TRAINING OF THE SURGEON.

The occasional medical address is apt to be rather perfunctorily prepared and delivered, but the speaker who made the annual oration in medicine at Yale University last June, dealt with topics of unusual interest, and gave expression to thoughts and ideas which are worthy of attention in a circle larger than that of his immediate audience.

The title of the address, which was recently published,[1] is scarcely commensurate with the matters debated, for not only was the training of surgeons discussed, but, in addition, the gradual rise of surgery was depicted, the condition of surgery in Germany was contrasted with that in America, the organization of an ideal surgical clinic was described, and the relations of hospital workers and surgical practitioners to university teaching and research were examined.

The speaker, drawing on the history of surgery, warned his hearers against satisfaction with present achievement and blindness to the possibilities of future development. Boyer, over a hundred years ago, declared that surgery had then reached almost, if not

1. Halsted, W. S.: The Training of the Surgeon, Bull. Johns Hopkins Hospital, Baltimore, vol. xv, 1904, pp. 267-275.

actually, the highest degree of perfection of which it was capable, and yet, only fifty years later, a quarter of a century was to begin in which pain, hemorrhage and infection, the three great evils which had always embittered the practice of surgery and checked its progress were to be, almost in a moment, robbed of their terrors.

The intimate interdependence of physiology, pathology and surgery was strongly emphasized. It was shown that without progress in physiology and pathology, surgery could advance but little, though surgery pays the debt by contributing much to the knowledge of the pathologist and physiologist. The studies of a Harvey, a John Hunter, a Pasteur or a Lister revolutionize the work of the surgeon. In Germany, a professor of pathologic anatomy was, in 1865, at the instigation of Helmholtz, called to the chair of surgery in Heidelberg, and the choice, though a surprise to many, proved to be most happy. Dr. Halsted believes that the stress formerly laid on postgraduate anatomy as a preparation for surgery would be disproportionate to-day; the necessary anatomy, now that knowledge of that subject is so definite, may be easily and quickly acquired, so that time will be available for very thorough training in pathology and physiology.

The fact that Germany was the first country to adopt antiseptic surgery, and that almost all surgeons in the German universities eagerly embraced Lister's system practically simultaneously was used by the lecturer as a text on which to make some comments regarding German surgery and German surgeons. Professor Halsted is evidently a great admirer of the scientific and practical training of surgeons in Germany. The ideal facilities for the learning of surgery and for prosecuting researches offered by great university clinics in Germany, the great amount of clinical material, the opportunities for operative work, the special surgical laboratories for working up pathologic material derived from operations or autopsies, the encouragement of research and the possibilities of finally becoming invited to fill a professorial chair, a position of such prestige there that we in the United States who have not lived abroad can not truly comprehend it—these, Halsted says, are among the inducements which make young men in Germany willing to devote eight or twelve years of hospital service as an assistant in some large university clinic as preparation for the practice of surgery.

Contrasted with the German conditions, the defects in the existing methods of medical education in America, and especially in the opportunities for the advanced training of surgeons, Dr. Halsted thinks, are obvious. The period of hospital interneship is too short. The hospital interne suffers from inexperience, but also from overexperience. He is given responsibilities which are too great for him; he acquires a confidence in himself and a self-complacency, useful, perhaps, in emergencies, but tending to blind him in his inadequacy and to warp his career. Hospitals and surgical departments directly under the control of the university professor and his staff are rare. Staff organization is imperfect; the establishment of close and mutually stimulating relations between chief and assistants is difficult. Professorial chairs in some of the principal medical schools actually go begging of men who would adorn the positions.

With regard to the relation of university professors of surgery to private practice, the speaker seems to hold views regarding restriction which are in sympathy with those which have been expressed by Welch, by Keen and by Barker. He urges, however, and many will think with propriety, that there are forcible objections to prohibiting the acceptance of fees by professors of surgery in universities. He favors a compromise between the extremes of prohibition on the one hand and of a large private practice on the other. He would let the surgeon accept fees from certain patients in the university hospital; he would restrict him to consultations and operations at the hospital; possibly in very exceptional cases he would permit him to visit a patient in his town or state or in another state if it were impossible for the patient to come to him. Private patients in a hospital need consume little or no more of the chief surgeon's time than the patients in the public wards.

Though critical of the defects in American conditions, Professor Halsted closed his address with a strong eulogy of American surgery. Courage, ingenuity, dexterity, resourcefulness—prominent characteristics of our countrymen—have led to surgical contributions which have carried the fame of American surgery throughout the civilized world. He believes that there are "few operations in surgery which can not be performed as well in this country as anywhere in the world, and not a few operations are best performed by the surgeons of America."

CIRCULATORY CONDITIONS DURING PREGNANCY AND THE PUERPERIUM.

The statement has been made that the heart undergoes hypertrophy during pregnancy, and this result has been attributed, among other things, to increase in the number and size of the vascular channels, in the quantity of blood, and in the intra-abdominal pressure, with insufficient expansion of the chest and compression of the lungs. The evidence to date on these points, as determined both by postmortem and by clinical observation, is, however, not conclusive. Also a systolic murmur or souffle has been referred to by numerous writers, and the pulse rate has been found diminished. With the view of forming an independent judgment in the matter, Drs. Alfred Stengel and W. B. Stanton[1] undertook a clinical study of the heart and circulation in seventy pregnant women, including physical examina-

1. Univ. of Penn. Med. Bull., September, 1904, p. 202.

tion before and after parturition, together with determinations of the blood pressure and sphygmographic tracings.

Thirty-nine of the patients were primiparæ and twenty-one multiparæ, while in ten cardiac or renal disease antedated the pregnancy. As a result of these observations, the conclusion was reached that pregnancy is not attended with any hypertrophy of the left ventricle, nor with any increase in its work. The increase in the area of cardiac dullness toward the left was found to be due to the upward displacement of the diaphragm, and the consequent displacement of the heart in an upward and outward direction. Comparative outlines made before and after labor demonstrated a rapid return to the normal position. A striking feature frequently observed was an increase in the extension of the dullness toward the left in the second and third interspaces and distinct pulsation in the same area. In the absence of evidence of retraction of the lung, and in view of the fact that the pulsation was marked, the phenomena are ascribed to distension of the conus arteriosus and root of the pulmonary artery. The frequent presence of a systolic murmur, most clearly audible in the same area, is considered as further substantiation of this view.

The position of the right border of the heart seemed on the average too far to the right, and this fact, in conjunction with the conditions present at the root of the pulmonary artery, appeared to indicate that during the later months of pregnancy there is probably some continuous dilatation of the right ventricle, though this is apparently of slight degree. Such a state of affairs is readily explained by the increased difficulty in the pulmonary circulation due to the upward displacement of the diaphragm and pressure on the lungs.

The separation of the abdominal recti muscles observed in multiparæ materially lessens the tendency to displacement of the diaphragm, and diminishes in corresponding degree the displacement of the heart during pregnancy. After delivery the diastasis may occasion downward displacement of the apex of the heart, and the contrast before and after labor may be quite as pronounced as in primiparæ, though the first position occupied may not have been far from normal. Later, if the separation of the muscles is not considerable and the normal tone of the abdominal wall is regained, a restoration to the normal occurs on the part of the heart and its apex.

As a rule, no material increase in the blood pressure was found before or after labor, although during labor a notable increase in the blood pressure was sometimes present.

EDDYISM AND PUBLIC HEALTH.

It is sometimes said, by those charitably inclined people who are ready to find excuses for others, that Eddyites scarcely deserve to be condemned so unsparingly as they often are, since at most they harm only themselves. This, of course, does not take into account that the most faithful members of the sect insist on exposing their families to whatever danger they themselves may incur because of their disbelief in disease and in modern medical methods. A case recently occurred in Connecticut, in which once more it has been made very clear how much risk to the community believers in the Mrs. Eddy cult may invite by their refusal to recognize the necessity for hygienic precautions and to obey sanitary regulations.

The occurrence was at Stamford, and it involved the death of one child and the exposure of many persons to diphtheria. In one of the public schools, a little boy, scarcely more than ten years of age, was noticed by his teacher to be suffering from headache, and his flushed face indicated that he had fever. He was sent home at once, with the thought, of course, that he would be properly cared for. No physician, however, was summoned to see the boy. The mother was a fervent believer in the principles of Eddyism, and a "healer" was sent for. The child evidently was very ill, but no report of his condition was made to the authorities. By the end of the week, rumors had reached the neighbors that the child was suffering from a contagious disease and, as no precautions were being taken to prevent its spread, the health authorities of the town were informed of the suspicions. In spite of protest on the part of the mother, a health officer forced his way into the house. He found the little boy almost in the last stages of diphtheria, while a brother and a sister were suffering from the same disease in a rather virulent form. After these discoveries, the board of health insisted on a physician being called, but the first little patient died scarcely twenty-four hours later. The other children, we believe, are well on the way to recovery. It was found that a child of the healer was also suffering from the disease.

Here, then, is a flagrant example of how much danger to the community may result from even one person insisting on not obeying the legal regulations that are enacted for the sake of public health. Of course, Eddyism is an unfortunate delusion, and one finds it hard to blame the poor misguided victims for actions for which they are not quite responsible. This is an attitude of mind, however, that the followers of the cult would be the first to resent. Under the circumstances, therefore, the only thing that can be done is to insist on punishment, to the fullest extent, for violation of sanitary laws. Unfortunately, as the death of the little patient in this case did not take place until some twenty-four hours after a physician had been called, and as the physician was, therefore, in a position legally to sign the death certificate, no prosecution of the parties involved will be instituted by the Connecticut authorities. This is a sad state of affairs.

It is evident that further and more stringent legisla-

tion is required in many of our states with regard to such conditions as this. Such legislation can only be obtained after proper education of the public mind. It is the plain duty of physicians to bring the details of cases like this to the attention of those who can be influential in procuring such legislation, and by this means help to stamp out an evil that threatens to endanger many others besides the unfortunate victims of the Eddyite delusion.

WHISKY PREFERENCES.

Julia Marlowe, the actress, announces to the public that she likes her whisky with a little bitter in it. At least, the newspapers are publishing her photograph with the following testimonial: "I am glad to write my endorsement of the great remedy, Peruna, as a nerve tonic. I do so most heartily.—Julia Marlowe." Perhaps it will not be deemed wholly flippant if it is noted that those who take their whisky straight, as a "nerve tonic," do not usually write testimonials thereof.

IS IT HERESY FOR AN EDDYITE TO HAVE SUPERFLUOUS HAIR REMOVED?

In our medicolegal items is mentioned a curious case recently decided by the Supreme Court of Michigan. It appears that the plaintiff, a believer in Eddyism, sought and obtained instruction in the art of mental healing. The defendant stood high in the cult, but the pupil found himself unbenefited by the teaching, and present and absent healing in his hands a failure. In other words, he found the instruction of the profitless profitless. Hence the suit to recover the money paid to the instructor. It appeared from the testimony that the defendant had suffered from hypertrichosis, and had employed a physician to remove the superfluous hair from her face. This, it was claimed, showed belief in disease, and, therefore, lack of faith in Eddyism, which rendered the defendant practically an impostor and vitiated her instruction as a teacher of Eddyite healing. The decision, however, was for the defendant, since two years had elapsed between the material treatment and the instruction of the immaterial to the plaintiff—a sufficient time, the court held, to allow her to qualify as an Eddyite instructor—and, moreover, the superfluous hair on the female face might be considered as a facial blemish rather than as a disease, and did not necessarily imply such a lack of faith as would make the individual incompetent to impart to others the secrets of the mysteries of practical Eddyism. Since both parties to the suit acted on the theory of the truth of Mrs. Eddy's teachings, the decision was made on that assumption. Eddyism is evidently a pretty slippery proposition.

GINGERISM.

According to a London cable dispatch, the use of essence or strong tincture of ginger as a stimulant is becoming dangerously popular among society people in Great Britain. In some cases very large quantities are said to be used, even as much as a pint daily. The fact that ginger is a well-known domestic remedy is very likely the starting point of its usage in cases of mental and social strain accompanied with gastric disturbances, but the habit becomes a cumulative one and fully as dangerous as the cocain, morphin and other drug habits which it is often desired to avoid. This constitutes a special danger; the subjects at first consider that they are taking a harmless remedy, which they have known as such from childhood days. The fact that essence of ginger is often nearly of full alcoholic strength renders the drug excessively dangerous, and the further fact that it may be obtained from druggists or grocers by anyone at any time is an additional special peril. The consequences of the ginger habit, beside those from the alcoholic contents, are generally aggravated gastric disturbance and general systemic disorder. The habit is said to be more common among women than men, but accurate statistics are hard to obtain. We have not yet heard of the vice as a common one in this country, but it probably exists, and the reported cases of wood-alcohol poison from the use of essence of ginger indicate a still more insidious peril of the habitual use of the drug. It is well to be warned on these points, and to be on the lookout for possible concealed habits that may be both individual and social dangers.

THE PSYCHOLOGY OF RAILROAD ACCIDENTS.

An eastern railroad president claims that certain railroad accidents are due to temporary psychologic aberrations that may occur even in the coolest and most experienced under special circumstances, without any specially obvious inciting cause. There is, beyond question, truth in this view, but it should not be taken as exonerating railroad companies and high railroad officials from responsibility. It is not very long since an accident, costing a number of lives, occurred from an apparent disobedience or neglect of certain orders. It was shown that some of the train hands, at least, had been on continuous duty for a considerable length of time beyond the usual term of duty, and lack of necessary rest and sleep was very naturally suggested. Railroad work is often very exacting, and there is too frequently caused a degree of mental and physical strain that is inconsistent with competency adequately to meet emergencies. The human machine overtaxed is as dangerous as any other worn-out or weakened part of the railroad machinery. An engineer or dispatcher, whose nervous system has been strained almost to the breaking point, may be as much a source of danger as a weakened or broken bridge. Modern requirements of speed and close connections of fast trains render such a possibility more than ever a matter to be guarded against. There is, moreover, in the human machine the added difficulty that defects involving nervous accuracy can not always be so easily detected as can defects in mechanical appliances. The greater is therefore the danger in requiring special stress and strain in railroad employes, and the more serious the responsibility of those who permit it.

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INDOOR HUMIDITY.

We have examined with unusual interest a copy of an article which Dr. Henry Mitchell Smith read before the Brooklyn Medical Society. Dr. Smith calls attention anew to the radical error in the arrangements for heating in common use to-day, namely, the absence of provision for supplying moisture needed in the air. He declares that in heating buildings we have failed to appreciate the full importance of the fact that our sensations of temperature depend not on the heat that is received from outside sources, but on the rapidity with which the body heat is lost. Radiation from the body is much more rapid when the air is lacking in moisture. To supply this moisture is a measure both hygienic and economic. On the latter point of view he quotes an authority as saying that "25 per cent. of the cost of heating is expended in raising the temperature from 60 to 70. So if we can keep comfortable at a temperature of 65, we shall have saved at least 12.5 per cent. of the total cost of heating." Relative to the above temperatures, Dr. Smith cites the results of an elaborate series of experiments, in which he found that a temperature of 65 degrees, when the air contained a proper amount of moisture, was warmer and more comfortable than a temperature of 72 or 74 degrees, with only half enough humidity. Dr. Smith has so repeatedly demonstrated this fact that he declares that it should be a cardinal rule that if a room at 68 is not warm enough for any healthy person it is because the relative humidity is too low, and in such case the procedure is to raise the relative humidity, not the temperature. Dr. Smith recommends that every household should have a hygrometer, and that water should be evaporated in rooms in sufficient amount to secure a relative humidity of about 60 per cent. In the absence of the hygrometer, a simple test will be to evaporate a sufficient amount of moisture to make the room comfortable at a temperature of 65 or 68 degrees. Dr. Smith suggests that the increase of catarrhal and other diseases in the winter time, including pneumonia, may be ascribed in some measure to the difference in the humidity between indoor and outdoor air. Not only is the dryness of the air conducive to hyperactivity of the glandular structures, but the passing from dry indoor air to moist outdoor air, and vice versa, is a severe strain on the mucous membranes. These facts are of great importance to the physician. For him to regulate the ventilating and heating apparatus of his patients' homes will be a tremendous task, and yet many affections can not be controlled until this important aid to health is properly looked after.

THE INFLUENCE OF INTESTINAL BACTERIA ON THE PROPERTIES OF THE BLOOD SERUM.

The study of the absorption of bacteria or bacterial products from the intestinal canal has both an academic and a practical interest. Although it is known from the work of Nuttall and Thierfelder that the presence of bacteria in the intestinal canal is not necessary to life, the practical fact remains that bacteria in enormous numbers are always present in this situation. Whether these bacteria are of any use in the economy—and it is conceivable that their products might aid in the digestive process—is still unknown. On the other hand, there seems good reason to believe that bacteria which are normal inhabitants of the gastrointestinal tract, and which, under normal circumstances, do no harm, may, under certain conditions, become pathogenic. This certainly seems to be the case so far as the colon bacillus is concerned, and, as is well known, this organism inhabits the intestines in enormous numbers. It seems strange from what we know of the process of immunity that a resistance on the part of the body to an organism which is so constantly present in large numbers is not developed. Can it be that the colon bacillus (taking this as a standard type of intestinal bacterium) does not get into the circulation under normal circumstances? Even if this be the case, is it possible that its products even are not absorbed? It seems likely from the work of Adami and his pupils that colon bacilli do get into the portal if not into the general circulation, and this suggests that the colon bacillus and its products may undergo certain changes in the liver which prevent the formation of immunizing substances. The subject is one which may be attacked experimentally, and recently Tchitchkine[1] has endeavored, by feeding young and also adult rabbits with cultures or toxins of the typhoid bacillus, to clear up some of the problems connected with it. This author finds that adult rabbits which are fed on large doses of typhoid bacilli develop in their blood agglutinins, fixatives and sometimes precipitins. The sera of such rabbits do not, however, possess any preventive properties. Similar but much feebler results were obtained by substituting filtrates of typhoid cultures or dead typhoid bacilli for the live cultures. In very young rabbits no results were obtained, perhaps because no absorption of the bacteria took place, or perhaps because the organism of very young animals is not capable of forming agglutinins and similar substances. If these experiments are applicable to the human being they explain why we are susceptible to colon infections, notwithstanding the fact that we constantly harbor the colon bacillus. There still remain many points along this line of investigation to be cleared up.

Medical News.

ARKANSAS.

Illegal Practitioner Fined.—Dr. Clement L. Katz, Morrison Bluff, has been fined $25 at Paris, for practicing medicine without a license.

Smallpox.—Ward, Lonoke County, reports about 20 cases of smallpox three miles north of the town.——Many cases are reported around Butlerville.——In these two neighborhoods there are said to have been 8 or 10 deaths from the disease.

Building for Doctors.—Work will be commenced in a few days on the new three-story office building which is to be put up by the Medical Building Company of Little Rock, at a cost of $50,000, and is designed for the use of physicians and dentists.

Hot Springs "Drummers" Must Go.—The following commissioners have been designated by the secretary of the interior to take up and regulate the practice of medicine at Hot Springs: Drs. William H. Barry and Samuel B. Steele and Hon. Charles D. Greaves.

1. Annales de l'Institut Pasteur, vol. xviii, No. 9.

Asylum Annexes Ready.—The two annexes to the Arkansas State Lunatic Asylum, Little Rock, which have been erected at a cost of about $140,000, will be ready for occupancy this month. These additions will increase the capacity of the institution from 672 to 1,022 patients.

CALIFORNIA.

Golden Wedding.—Dr. and Mrs. Charles L. Anderson, Santa Cruz, celebrated their fiftieth wedding anniversary, October 31.

Personal.—Dr. and Mrs. Charles E. Hablutzel, San Jose, have returned after a six months' tour of Europe.——Dr. Robert C. Howe, Orland, was seriously burned about the face and neck by the explosion of a bottle containing nitric acid and alcohol. ——Dr. George F. Shiels, a trustee of the San Francisco Polyclinic since its inception, has left San Francisco and will locate in New York City.——Dr. J. Coplin Stinson has resigned from the San Francisco Board of Health.

In Charge of Hospitals.—The board of directors of Redlands Hospital, which was opened November 1, consists of Dr. Christopher A. Sanborn, president; Dr. Hoell Tyler, vice-president; Dr. Gayle G. Moseley, secretary, and Drs. J. E. Payton and Charles E. Ide.——Drs. Charles D. Ball, John L. Dryer, James R. Medlock, Francis M. Bruner, John G. Berneike, Howard S. Gordon, John Wehrly, James P. Boyd and Willella H. Waffle have been chosen directors of the Santa Ana Hospital Association, and Dr. Dryer has been elected president; Dr. Bruner, vice-president; Dr. Ball, secretary, and Dr. Gordon, treasurer, of the board.

Propositions for the Legislature.—At a conference of the health officers of the various counties and municipalities of the state, held at San Francisco October 29, the association resolved to submit the following five propositions at the next session of the legislature:

First.—That the State Board of Health be given power to control matters throughout the state and make regulations and punish offenders instead of being merely an advisory body.

Second.—That a State Board of Statistics be created and maintained.

Third.—That a State Registrar of Vital Statistics be appointed.

Fourth.—That a state bacteriologic laboratory be established in San Francisco.

Fifth.—That county health officers be appointed on salaries.

ILLINOIS.

Personal.—Dr. John A. Pratt, Aurora, has returned from Europe.——Dr. Aurelius T. Bartlett has retired after 40 years of practice in Virden.——Dr. George W. Hall has returned to Chicago after spending several months in Europe.

Smallpox.—Smallpox has developed at La Grange. One of the patients is an Eddyite who objected to vaccination after she had visited a friend who had the disease.——Several cases are reported at Orland.——Alton reports two cases.

To Examine Staff Candidates.—The board of physicians to examine candidates to serve on the staff of Cook County Hospital is made up as follows: Surgery—Drs. Arthur D. Bevan, John B. Murphy, Louis L. McArthur; gynecology—Drs. Fernand Henrotin, Emilius C. Dudley and Henry Banga; obstetrics—Drs. J. Clarence Webster, Joseph B. De Lee and Charles S. Bacon; medicine—Drs. Otto Schmidt, Frank S. Johnson and William E. Quine; children's diseases—Drs. Frank B. Earle, John C. Cook and Alfred C. Cotton; skin, venereal and contagious diseases—Drs. James Nevins Hyde, Frank H. Montgomery and Joseph Zeisler; eye, ear, nose and throat—Drs. T. Melville Hardie, William H. Wilder and E. Fletcher Ingals; nervous diseases—Drs. Hugh T. Patrick and Harold N. Moyer; pathology and pathologic chemistry—Drs. Ludvig Hektoen, Robert H. Harvey and F. Robert Zeit, and *x*-ray—Drs. Joseph F. Smith and Oliver S. Ormsby. Dr. Hugh T. Patrick has been elected chairman of the board. The examinations were to begin November 18 and to continue until all places are filled.

Chicago.

Fined Twice in One Week.—Dr. Adolph Brendecke was fined $100 and costs for selling cocain. Less than a week before he was found guilty of a similar offense and fined $50 and costs. He says he will appeal from both decisions.

The Week's Deaths.—For the week ended November 12, 413 deaths were reported, equivalent to an annual mortality rate of 11.17 per 1,000. The rate for the previous week was 11.36, and for the corresponding week of 1903, 13.45 per 1,000. Pneumonia caused 57 deaths; consumption, 47; violence, 36; heart diseases, 33; intestinal diseases, 26, and Bright's disease and cancer, each 25.

Pneumonia Again Leads.—For the first time since the week of May 28 the deaths from pneumonia exceed those from consumption; there were 57 pneumonia and 47 consumption deaths recorded during the week—an excess of 21.2 per cent. of pneumonia. During the intervening five months there were 1,188 deaths from consumption and 985 from pneumonia—an excess of 73.4 per cent. of consumption deaths.

IOWA.

Hospital for Mason City.—The Sisters of Mercy of Dubuque have received an offer from Mason City to establish a hospital there. The committee agrees to provide $50,000 if the sisters will furnish $30,000.

Tuberculosis in Iowa.—It was stated that in 1900 the deaths from tuberculosis in Iowa outnumbered the deaths from all other contagious diseases. A recent investigation indicates that there are about 8,000 cases of tuberculosis in the state.

Temporarily Blocks Vaccination Law.—In the District Court at Iowa Falls, November 12, Judge Richards granted a temporary injunction restraining the school board of that city from preventing pupils from attending school unless vaccinated in the manner prescribed by the State Board of Health, thus allowing those treated by the internal method to attend school.

KENTUCKY.

Medal for State Board.—The Kentucky State Board of Health has been awarded a silver medal at the Louisiana Purchase Exposition for its exhibit of literature on the prevention of disease.

Physician Wins Suit.—Dr. Thomas T. Cleaver, Lebanon, was given a verdict of $7,500 against the Louisville and Nashville Railroad Company in the Circuit Court, October 18. Dr. Cleaver was injured last spring while driving across the railroad track in front of an incoming passenger train.

Personal.—Dr. Walter F. Boggess, Louisville, has resigned from the chair of practice of medicine in the Kentucky School of Medicine and has accepted the chair of practice of medicine and physical diagnosis in the Hospital College of Medicine.——Dr. Walter A. Lackey, first assistant physician of the Western Asylum for the Insane, Hopkinsville, has resigned to enter private practice.

Will Run No Risks.—Despite the report from the members of the Board of Health of Christian County that in their opinion the smallpox situation was well under control, the State Board of Health, which met in Louisville October 29, ordered Dr. James B. Jackson, Hopkinsville, chairman of the county board of health, to hold weekly meetings of his board until the state board is satisfied that all danger is passed. Christian County has been infected with the disease for the past six months, and it has spread to neighboring counties. While the situation is not one to give cause for undue alarm, the state board expressed the opinion that the disease should be thoroughly stamped out before winter sets in.

MARYLAND.

Baltimore.

Personal.—Dr. Augustus G. Pohlman has resigned as instructor of anatomy at the Johns Hopkins Medical School to accept an appointment as assistant professor of anatomy in the University of Indiana.

Plans for Johns Hopkins.—On November 11 President Remsen explained "the Homewood plans" for the Johns Hopkins University. The present needs of the university require only an administration building, a lecture hall, a library and four laboratories. When the move will be made is uncertain, but Dr. Remsen thinks it now feasible. The board of architects has chosen the plan of a Baltimore firm—one of the five which competed—pictures of which were thrown on a screen. Dr. Remsen recommends that the buildings be simple and comparatively inexpensive, but representative of a high style of architecture.

The Smoke Evil.—In an address before the Good Government Club, Dr. Howard A. Kelly condemned the smoke evil. "If we allow such a condition to go on," he said, "unchecked, and are content, like the people of Cincinnati and Pittsburg, to let our clothing, our streets, our houses, as well as our lungs, be insulted by this filth, then must ensue not only an injury to health, but, what I consider an even greater evil, the lowering of the moral tone of the community. . . . You can not, day by day, breathe particles of coal dust or any other form of

dirt, without enormously enhancing your chances of tuberculosis and other pulmonary diseases; and with the lungs once clogged in this way, the powers of resistance to disease are lessened and the chances of recovery diminished." A bill passed one branch of the city council about a year ago for the arrest of this evil, but failed to pass the second branch. As a result of this meeting an address will be sent to the city council asking that this ordinance be revived and made a law.

MASSACHUSETTS.

The Massachusetts Sanatorium for Consumptives at Rutland has a capacity for 325 cases, to be increased to 400. They report 48.97 per cent. of cases cured, 43 per cent. improved, and only 7.9 per cent. unimproved.

Farewell Banquet to Dr. Collins.—The physicians of Haverhill, on October 31, tendered a banquet to Dr. William D. Collins, who, after 27 years in that city, is about to remove to Cambridge. After the banquet a silver loving-cup, suitably inscribed, was presented to Dr. Collins.

Massachusetts Charities.—Massachusetts has 463 charitable corporations, who spend $5,320,000 per year, occupy property valued at $17,725,000 and have invested funds totaling $23,147,000. Of 382,537 beneficiaries during the year, 40,399 paid, 96,989 paid part, and 245,149 paid nothing.

Diphtheria on the Wabash.—The United States receiving ship *Wabash*, stationed at the Charlestown Navy Yard, has been invaded by diphtheria. A large number of mild cases have appeared, the vessel has been quarantined and patients have been removed to the Naval Hospital, Chelsea.

Irregular Practitioner Punished.—Charles J. Stuart, Grafton, who claimed to be a medical electrician, was found guilty of violation of the registration laws of medicine, was fined $100, and sentenced to three months in the house of correction. On his appeal he was remanded to the Superior Court under bail of $500.

Boston Deaths.—During the ten weeks ending Nov. 5, 1904, there were reported to the Boston Board of Health 1,946 deaths. There were reported 486 cases of diphtheria, with 32 deaths; 123 of scarlet fever, with 5 deaths; 390 of typhoid fever, with 46 deaths; 48 of measles, with 2 deaths, and 374 of tuberculosis, with 200 deaths. There were 162 deaths from pneumonia, 7 from whooping cough, 180 from heart disease, 43 from bronchitis and 61 from marasmus. Of the decedents 502 were under 1 year old, 633 under 5 years old, and 393 over 60 years old.

Asylum Report.—The Northampton Insane Hospital reports for the year ended September 30, 732 patients, an increase of 60 during the year. During the year 333 were admitted and 273 discharged. The patients come mostly from the western counties. The causes noted in order of frequency are heredity, intemperance, senility, congenital causes and organic diseases of the brain. The total expenses were $145,128. The superintendent urges the establishment of colonies in the western part of the state to relieve the overcrowding which has resulted from taking all the pauper insane to state hospitals as now required by law.

An Academy of Medicine in Boston.—The movement toward the development of an academy of medicine in Boston takes form this winter in the promulgation of a plan for a series of meetings at the Boston Medical Library. The schedule has been prepared and sent to members of the Boston Medical Library and of the Suffolk district of the Massachusetts Medical Society. Refreshments are to be served each evening. All physicians will be welcome and it is expected that many will attend outside of these societies. The program is as follows:

November 16. Nephritis: Pathology. Prof. W. T. Councilman. Clinical Examination of Urine. Prof. E. B. Wood. Diagnosis. Dr. Richard C. Cabot. November 30. Ptosis of the Abdominal Organs with Special Reference to the Kidney; Discussion. December 7. The Humane Treatment of Malignant Disease from a Surgical Point of View. Dr. John C. Munro. December 21. Nephritis: Medical Treatment. Prof. F. Pfaff. Surgical Treatment. Dr. Paul Thorndike. Prognosis. Dr. Frank Wells. January 4. General Treatment of Appendicitis; Discussion. January 11. Medical Charity. Dr. Geo. W. Gay. January 25. A Study of Objective Methods of Diagnosis of the Stomach in a Medicosurgical Clinic with Report of Cases. Dr. H. F. Hewes. Results of Surgical Treatment of Benign Disease of the Stomach. Dr. J. G. Mumford. February 1. Results of Operative Treatment of Cancer in and About the Mouth: Discussion. February 11. Physiological Economy of Nutrition. Prof. R. H. Chittenden. New Haven. February 15. Recent Work on Etiology of Disease. Prof. W. T. Councilman. March 1. The Surgery of Renal and Ureteral Calculi: Discussion. March 8. The Present State of Opinion Concerning Sewer Gas and Its Effects. Prof. Wm. T. Sedgwick. Nine Years' Experience in the Treatment of Diphtheria with Antitoxin at the South Department of the Boston City Hospital. Dr. John H. McCollom. March 11. Open. April 5. Cerebral and Spinal Surgery: Discussion.

MICHIGAN.

Personal.—Dr. Elmer D. Gardner, Hancock, has accepted the position of head physician of the Louisiana Lumber Company and will locate at Clark, Caldwell Parish, La.

Smallpox at University.—Seven cases of smallpox were discovered November 14 among the students at the University of Michigan, Ann Arbor, six in the engineering and one in the law department. The health officer considers the disease under control.

Hackley Hospital Open.—Hackley Hospital, Muskegon, the latest gift of Charles H. Hackley to the city, was formally dedicated and opened November 17. The hospital, aside from its endowment, has cost more than $200,000, occupies four city blocks, is built on the pavilion plan, is fireproof, 204 by 250 feet, and three stories in height.

Must Add to Curriculum.—High school graduates in Michigan can not enter the medical schools of the state because their standard does not come up to that of the state university. The deficiency is in biology, mathematics and physiology. The medical schools call for less geometry and a semester of trigonometry instead; a more extended course in physiology, and for zoology in addition to botany.

NEW YORK.

Fire in Children's Hospital.—A fire occurred in the Day Nursery and Children's Hospital at West Brighton, S. I., causing a loss of $8,000. Fortunately, the children were not in the building when the fire occurred.

School Inspection.—The inspection of the schools of Rochester began October 17 under the direction of the Rochester Public Health Association. The following five physicians have been designated by the association as medical inspectors: Drs. Samuel H. Rosenthal, Charles R. Witherspoon, William E. Dake, Frank T. Bascom and Michael L. Casey. Each of these will be put in charge of, and be held responsible for, the health of three schools.

Albany Alumni Meet.—The Central New York Alumni Association of Albany Medical College held its fourth annual meeting and banquet at Syracuse, September 28. Dr. Eli Van de Warker, Syracuse, officiated as toastmaster.——The annual meeting of the New England Branch of the Albany Medical College Alumni Association was held in Springfield, Mass., October 20. Dr. Albert Vander Veer delivered an address on "Recent Progress in Surgery." Dr. Thomas D. Crothers, Hartford, Conn., was elected president; Dr. Alva E. Abrams, Hartford, vice-president; Dr. Walter G. Murphy, Hartford, secretary, and Dr. Alfred H. Hoadley, Northampton, Mass., treasurer.

New York City.

Hospital for Ruptured and Crippled.—The report for the year just ended showed that more than 45,000 cases were treated in the hospital and outdoor department during the past year.

New French Hospital Open.—The French Benevolent Society has opened its new hospital on West Thirty-fourth Street, M. Jusserand, the French ambassador, and Mayor McClellan conducting the exercises.

St. John's Guild.—At the annual meeting of this association a plea was made for more funds. During the past season the Floating Hospital carried 27,826 babies and mothers, and the Seaside Hospital accommodated 2,256.

Annex for Consumptives.—The New York Post-Graduate School and Hospital has been given an adjoining house, which is to be converted into a hospital for the treatment of consumptives, and has been promised $6,000 yearly for its maintenance.

Montefiore Home.—The annual report of this institution shows that 889 patients had been cared for during the past year, but the resources were not half equal to the demands made on it. A strong appeal for funds for a larger building was made.

Contagious Disease.—There were reported to the sanitary bureau for the week ended November 5, 344 cases of tuberculosis, with 150 deaths; 304 cases of diphtheria, with 23 deaths; 178 cases of scarlet fever, with 9 deaths; 91 cases of typhoid fever, with 19 deaths; 70 cases of measles, with 5 deaths; 72 cases

of varicella, 2 cases of smallpox, and 5 deaths from cerebro-spinal meningitis.

The Air of the Subway.—Because of the comments of several physicians and the announcement of Prof. Adolph Spicer, chemist at Cooper Union, in regard to the condition of ventilation in the subway, Commissioner Darlington is about to make an investigation. Professor Spicer announced that after testing the subway air he had found it lacking in oxygen and that passengers had to breathe much more rapidly than above ground. Dr. Darlington has authorized Prof. Charles F. Chandler of Columbia University to make the tests for the Board of Health and to report.

PENNSYLVANIA.

Personal.—Dr. John W. Coffin, Beaver Falls, for 10 years major-surgeon of the Tenth Infantry, N. G. Pa., has resigned and will locate in El Paso, Texas.

Bequest to Chester Hospital.—The Chester Hospital has received a gift of $15,000 from A. O. Deshong, to be used exclusively for the equipment of a laundry for the institution.

First Hospital for Consumptives in Western Pennsylvania.—Through the generosity of a resident of Oil City, western Pennsylvania will have its first modern hospital for the treatment of pulmonary tuberculosis opened November 21. The hospital is located on a large farm about three miles from Oil City, and at an elevation of 1,600 feet. At present 15 patients will be accommodated. Both charity and pay patients will be received. The treatment will be the same as that which has been so successfully carried out at White Haven, Pa. Application for admission can be made to Dr. Harvey E. Kirschner or Dr. Frank McCarthy, Oil City.

Philadelphia.

Smallpox at League Island.—One case of smallpox was discovered among the marines on the battleship *Alabama* at League Island. The patient was transferred to the Municipal Hospital and every effort is being made by the medical staff of the yard to prevent the further development of the disease. There are nearly 700 enlisted men on the battleship.

Personal.—Dr. Harry C. Deaver sustained a Colles' fracture October 29 by being struck with the crank of his automobile. ——Dr. Alfred Gordon was elected instructor of neuro-pathology and psychiatry in the Jefferson Medical College, vice Dr. William R. Pickett, resigned.——Dr. D. Forrest Harbridge has been elected visiting ophthalmologist to the Chester City Hospital.

Dinner to Dr. Cullen.—Dr. Wilmer Krusen gave a dinner in honor of Dr. Thomas Cullen of Johns Hopkins University, November 10. Among those present were Drs. Edward E. Montgomery, John G. Clark, Samuel Wolfe, Henry J. Walcott, Jr., of Springfield, Mass., J. Thompson Schell, Elmer E. Brown, I. Newton Snively, Charles S. Barnes, John C. Applegate and Frank C. Hammond.

Bequests.—By the will of Emma M. Thompson $9,988 is divided equally between the Philadelphia Home for Incurables and the Children's Hospital.——By the will of Anna H. Wilsbach the Hospital of the Protestant Episcopal Church, the Episcopal Home for Consumptives, and the Pennsylvania Hospital receive $6,000 each, and the Howard Hospital $800.——By the will of Sallie Tuston the Methodist Episcopal Hospital receives $500.

Alumni Election.—The annual meeting of the Philadelphia Alumni Association of the Medical Department of the University of Pennsylvania was held November 12. The following officers were elected: President, Dr. Jay F. Schamberg; honorary vice-president, Provost Harrison; vice-presidents, Drs. De Forest Willard, Edmund Holmes, John Marshall, O. H. Davidson and Joseph Gibbs; treasurer, Dr. Herbert B. Carpenter, and secretary, Dr. B. Franklin Stahl.

Health Report.—The records for the week show a rather large increase in the death rate, due largely to pneumonia and Bright's disease. The deaths from all causes during the week numbered 423, an increase of 37 over those of last week and 47 over the corresponding period of last year. There was a decided increase in scarlet fever, the whole number of cases reported being 105, as compared with 73 for the preceding seven days. Three deaths resulted from traumatic tetanus, 35 from disease of the kidneys, 70 from diseases of the lungs other than tuberculosis, and 52 from tuberculosis. In all there were 229 cases of contagious disease, with 13 deaths, as compared with 217 cases and 13 deaths for the preceding week.

TEXAS.

New Hospital at Temple.—The Santa Fe Employes' Hospital Association will erect a three-story brick hospital building at Temple, to cost $24,000.

Wolff's Successor.—Governor Lanham has appointed Dr. J. H. Florence, Dallas, now at Aransas Pass, quarantine officer at Brownsville to succeed the late Dr. Arthur S. Wolff.

October Quarantine Fees.—The receipts of the State Health Department from quarantine fees for the month were as follows: Galveston, $2,182; Sabine Pass, $847; Brownsville, $22; Aransas Pass, $5; Velasco, $2, and Pass Cavallo, $2; total, $3,060.

New Building for Medical Department.—The trustees of Southwestern University have decided to erect a new building at Dallas for the medical department of the university, to cost from $60,000 to $75,000 and to be ready in time for the opening of the college year in September, 1906.

Colleges Consolidate.—The Dallas Medical College has consolidated with the Baylor University College of Medicine, and the new institution will be known in the future as the Dallas College of Physicians and Surgeons (Medical Department of Baylor University). The combined matriculation will number 250 students. The new consolidation carries with it membership in the Southern Association of Medical Colleges. The majority of the members of each faculty will have places provided in the new institution.

GENERAL.

Southern Medical College Association.—This organization will hold its next annual session in the Hillman Hotel, Birmingham, Ala., December 12.

To Study Epilepsy.—The fourth annual meeting of the National Association for the Study of Epilepsy, etc., will be held in the medical library of the Fenway, Boston, November 22. The association invites all persons interested in the welfare of epileptics and in charity work generally to attend the meeting. The preliminary program which we have received indicates that the meeting will be an instructive one. The secretary of the association is Dr. William P. Spratling, Sonyea, N. Y.

Southern Surgical and Gynecological Association.—The seventeenth annual meeting of the Southern Surgical and Gynecological Association will be held at Birmingham, Ala., December 13-15. There will be reduced rates on all railroads of the Southeastern Passenger Association. The secretary of the association is Dr. W. D. Haggard, Nashville, and the chairman of the committee of arrangements, Dr. John D. S. Davis, Birmingham. The preliminary program is a very interesting one and covers the whole field of work of the association.

Consumption of Spirits, Beer and Wine.—The Department of Commerce and Labor, through its bureau of statistics, has published the following table, which shows per capita the consumption of the three kinds of beverages in the following countries:

	Gallons.		
Countries	Spirits.	Beer.	Wine.
United Kingdom	1.38	35.42	.39
France	2.51	7.48	34.73
Germany	2.11	20.77	1.93
Italy	.34	.20	31.86
Russia	1.29	1.13	.....
Belgium	1.42	36.59	1.28
Sweden	2.13	8.83	.18
United States	1.33	18.04	.48

It is seen that France shows the heaviest consumption of the most concentrated beverage, spirits, viz., 2.51 gallons per inhabitant. The United States is well-nigh at the end of the list of spirits-drinking countries. Belgium stands at the head of the nations in the matter of per capita consumption of beer, its per capita consumption being 36.59 gallons. Second in order is the United Kingdom with 35.42 gallons, while Germany, which shows the largest absolute figures of consumption, in the matter of per capita consumption, takes third place with 20.77 gallons. The United States follows with 18.04 gallons, while Italy has .20 gallon. The consumption of wine may be said to be concentrated in two countries chiefly, France and Italy, both the absolute and per capita consumption showing that wine in these countries is a common article of consumption rather than an article of luxury, used only by the favored few. The figures of per capita consumption of wine in these countries—34.73 gallons in France and 31.86 gallons in Italy—are almost identical with those shown for beer by the United Kingdom and Germany. The consumption of wine in the other countries is relatively insignificant.

Transportation Rates to Cuba and Panama.—Dr. H. L. E. Johnson, Washington, D. C., in charge of transportation arrangements for the American Public Health Association at Havana, Cuba, and the fourth Pan-American Medical Congress, at Panama, January, 1905, writes that the only rates obtainable are the winter tourist rates for 1905, which apply either at Tampa or Miami, with stop-off privileges and limitation to May 31. Round trip from Montreal, Canada, to Tampa or Miami will be about $107.50; Portland, Maine, $103.50; Boston, $96.50; New York City, $86.50; Philadelphia, $82.50; Pittsburg, $78.40; Washington, D. C., $76.50; St. Paul, $84.60; Chicago, $60; St. Louis, $50; San Francisco, via New Orleans and steamer, one way, $78. The Transcontinental Passenger Association grants nine months' tourist rate, about one and one-third regular fare, round trip, about 2 cents per mile. From California common points to Chicago and return $110, plus tourist rates from that point to Havana. To St. Louis, Memphis, New Orleans and return, $102, to which add tourist rate to Havana, for example, San Francisco to New Orleans and return, $102, plus transportation by ship to Havana and return. From North Pacific common points and return, to Chicago, $110; St. Louis, $102; Memphis, $111.60; New Orleans, $117. From these points, for example, from New Orleans add the boat rate to Havana and return. Ward lines out of New York and return, $75 round trip, meals and berth; one way, $40. Diverse routes returning can be arranged. A special ship is promised, if 25 members take passage via New York, at a special rate of $60. (Rates subject to change.) For a combination trip to Panama the Di Giorgio Steamship Company of Baltimore offers a trip with meals, berths and no extra expenses, for $130, for the trip of about 26 days, provided at least 50 persons take passage. The steamship *Athos* will leave Baltimore December 24, 1 p. m., touching Jamaica and arriving Panama January 1. After adjournment of Pan-American Medical Congress, leave Panama January 6, evening, due Havana, January 8, evening. After adjournment of American Public Health Association, leave Havana January 13, arriving Baltimore, January 17. The ship will be for the exclusive use of the party. Full information will be furnished by Mr. Ralph F. Nolley, agent, 103 Park Avenue, Baltimore, or Dr. H. L. E. Johnson, chairman of transportation, 1821 Jefferson Place, Washington, D. C. The Panama Railroad Steamship line, of New York and Panama, advise trip to Panama and return direct, cabin, $150 to $200, according to location. Ship leaves New York every Tuesday. General office, 24 State Street, New York City. C. C. Van Riper, agent. These ships do not touch at Cuba or Havana going or returning. Panama can be reached via New Orleans by the United Fruit Company's steamers.

CANADA.

To Limit Tuberculosis in Montreal.—The Montreal city council will pass a by-law prohibiting spitting on the public walks, etc., with the aim of preventing the spread of tuberculosis.

Toronto New Consumption Hospital.—The National Sanitarium Association reports 40 patients received into its new consumption hospital near Toronto. The physician in charge is Dr. Allan H. Adams. The institution is free and advanced cases are being accepted. This hospital will be maintained by a per diem allowance from Toronto patients, by a government grant and by private subscription.

Toronto General Hospital Report for October.—This hospital reports: Patients in hospital September 30, 244; admitted in October, 229; births, 7; discharged, 212; deaths, 23; remaining in hospital October 31, 245. The death record includes ten cases brought to the hospital in a dying condition. Over 900 extra patients received advice and treatment in the outdoor departments, and nearly 200 cases received first aid at the emergency branch.

Vaccination Popular in Montreal.—The annual health report of Montreal shows that out of 90 persons who had smallpox last year, not one had been vaccinated during the past five years. Montreal is now a much better vaccinated city than it was a few years ago. The health department now has the co-operation of all schools and factories in the city in order to enforce vaccination. Civic officials who are at present going around the schools vaccinating report that they meet scarcely any opposition, whereas two years ago over 1,000 children refused to attend school because they had to submit to vaccination.

Ontario Physicians Transferred.—Dr. R. W. Bell, second assistant physician at the Asylum for the Insane, London, Ont., has been made medical inspector of the Ontario Board of Health. His position at London has been filled by Dr. W. C. Herriman from the Kingston asylum. Dr. McNaughton of London asylum has been transferred to Kingston. Dr. W. P. St. Charles of the Mimico asylum has been appointed relieving officer to public institutions in Ontario. Dr. George M. Biggs has been appointed assistant at Mimico. Dr. W. T. Wilson, third assistant at the Hamilton asylum, has been transferred to London asylum.

Caring for Insane in Jails in Ontario.—For a number of years the jails throughout the province of Ontario have had to do service in housing some of the insane of the province, the government claiming insufficient asylum accommodation. The cry against thus housing insane people with criminals has been effective, and the government is removing all those suitable for asylum treatment. Each jailer is now required to make a special report to the government each month on the insane people under his charge, and a similar one to the superintendent of the asylum in his district. Thus it is sought to avoid the unnecessary detention of any insane in the county jails.

Annual Health Report of Montreal.—The mean annual death rate for the past eighteen years for the city of Montreal, leaving out that for 1885, the year in which the great smallpox epidemic prevailed, was 24.77 per 1,000, while the rate for 1901 was 23.25, and that for 1902, 22.58 per 1,000. The rate for 1903, 20.21 per 1,000, is 4.56 less than the mean rate for the preceding eighteen years; 3.04 per 1,000 and 2.37 per 1,000 less than 1901 and 1902 respectively. Tuberculosis caused less deaths than in preceding years. Before 1900 the number of deaths was 692; in 1901, 647; in 1902, 644; while in 1903 the number was 633. In 1903 there were 2 deaths caused by smallpox, or 8 less than in 1902; 77 by measles, or 7 less than in the preceding year; 24 by scarlatina, or 40 less than in 1902, 21 less than in 1901, and 108 less than in 1900. The deaths by diphtheria and diarrhea can not be compared, as they have been classified according to the new international system. Typhoid fever caused 90 deaths, or 4 more than in 1902. Bronchitis caused 224 deaths. Pneumonia, including bronchopneumonia, caused 528 deaths, or 16 less than in 1902.

FOREIGN.

Defective Teeth in the British Army.—In future men who are suffering from defective teeth will not be accepted as recruits until the decayed teeth are replaced with artificial ones. Men who would otherwise be discharged from the army for this cause will now have their teeth attended to, a certain sum being deducted from their pay for this purpose.

Pension for Finsen's Widow.—A bill has passed the Danish lower house, presented by a cabinet minister, awarding a pension of nearly $1,000 to Finsen's widow. This is three times the pension given the widow of any state official. A subscription list is being circulated also to raise funds for a memorial to Finsen, signed by all the cabinet ministers, members of the legislature and editors of the country, besides many of his patients.

Official Denunciation of Quackery in Bavaria.—A recent official notice issued by the Bavarian government urges physicians and medical societies to watch for swindling ads. published by irregular practitioners and to institute legal proceedings against them. It concludes with the remark that the authorities must bear in mind that quack practices have become a serious evil in public life, to the injury of the interests of the public and of the medical profession, and that efforts to reduce this evil promote the public welfare.

Infant Mortality in Berlin.—The last summer was an unusually hot season in Europe, but the infant mortality in Berlin was kept below the average by vigorous efforts to insure a good milk supply. The total number of deaths during the summer months of children less than a year old was 4,625 in 1900, 4,454 in 1901, and 3,522 in 1904. About 60,000 circulars on the care of infants were distributed, and 48 veterinary surgeons formed a volunteer force to supervise conditions in dairies. The total infant mortality for the year will probably range about 10,000, but in 1900 it was 11,762. The population of Berlin is about 1,900,000.

Quacks in Mexico.—An editorial in the last *Escuela de Medicina*, xix, No. 19, states that nowhere in the world do quacks have such absolute liberty to ply their trade as in Mexico. No one interferes with them in any way, and the lay press teems with their advertisements. The editorial makes a solemn appeal to the government to protect the pub-

lie against their practices. It has grappled with the questions of drunkenness and gambling, and no one has complained that the freedom of the individual is incompatible with legislative restrictions on these vices. "Why should there be any more outcry if the government should seek to protect the people against the swindling practices of the quacks?" Several flagrant instances of the latter are cited.

LONDON LETTER.

Yellow Fever Expedition to the Amazon.

The Liverpool School of Tropical Medicine proposes to dispatch a second yellow fever expedition to the Amazon to investigate still further this disease. It may be remembered that the late Dr. Myers was selected by the school with Dr. Herbert Durham to undertake an expedition to Para to investigate the disease a few years ago. They were both attacked by the fever and Dr. Myers died. The expedition will probably start at the end of the year.

Correspondence.

The Alma Sanitarium and Dr. Butler.

CHICAGO, Nov. 11, 1904.

To the Editor:—As former medical superintendent of the Alma Springs Sanitarium, Alma, Mich., I desire emphatically to deny certain reports to the effect that there were unpleasant and unsatisfactory relations existing between the sanitarium company and myself. I have nothing but commendable words to say of the institution, its management and of Dr. Raymond C. Turck, its present medical superintendent and business manager. He is a well-qualified physician and surgeon, and the institution is everything that is claimed for it. GEO. F. BUTLER, M.D.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

SECRET METHODS OF TREATMENT.

EL PASO, TEXAS, Oct. 29, 1904.

To the Editor:—Kindly tell me through your columns what, if any, standing the "Ensor" treatment for inebriety has with the medical profession. I understand it is a secret system of treatment, and therefore inimical to the best interests of our profession. 2. Would a doctor hired by the company to administer this treatment, and who is giving the treatment, knowing it to be a secret form of treatment, i. e., administering drugs the nature of which he is ignorant, be eligible to membership in an affiliated society of the American Medical Association, a county society, for example?

X. Y. Z.

ANSWER.—1. We know nothing of it. 2. Not if the members of the county society to which he applies do their duty to themselves and to the profession.

TENTS AND HOUSES FOR CONSUMPTIVES.

LOWELL, IND., Nov. 10, 1904.

To the Editor:—Where may I find plans for an adequate frame building for the outdoor treatment of a tubercular patient? Where may a suitable tent be obtained for the same purpose?

A. J. WILLITS.

ANSWER.—An illustrated description of a frame building for consumptives appeared in THE JOURNAL, May 7, 1904, p. 1232; an excellent tent was fully described and illustrated in THE JOURNAL, Dec. 26, 1903, and methods of adapting porches for this purpose are illustrated in the *Illinois Medical Journal* (Springfield), October, 1904. Further, some tents are mentioned in the report of the Maryland Tuberculosis Exposition, described in THE JOURNAL, Feb. 6, 1904, p. 391. You ask for plans. None of the above gives what are called architects' plans. Such are probably unnecessary because of the simplicity of the building. Any carpenter competent to take charge of the erection of such a building can draw sufficient diagrams.

PRIVATE PRACTICE BY SURGEONS OF THE ARMY, ETC.

To the Editor:—1. Is a medical officer of the United States Army or of the United States Public Health and Marine-Hospital Service legally qualified, without having complied with the special medical laws of the state or territory wherein he may be stationed, to engage in private practice? 2. Is it customary to treat such officers as legally qualified practitioners and to allow them to engage in private practice without undergoing the examination? 3. Is such an officer eligible to membership in an affiliated society without having complied with such state or territorial laws? X.

ANSWER.—1. No, unless the laws of the particular state make an exception in such cases. 2. Yes, this custom is very general in states whose laws do not provide for the case. When a physician leaves one of the services he is, we suppose, treated as an ordinary physician, subject to examination. 3. Officers of the medical departments of the Army, of the Navy and of the Public Health and Marine-Hospital Service are eligible to membership as such.

DURATION OF LICENSE TO PRACTICE.

CHICAGO, Nov. 9, 1904.

To the Editor:—1. Does a license to practice in Indiana, granted in 1895, entitle the holder to practice in that state now without an examination? 2. Give address of secretary of the American Confederation of Reciprocating Examining and Licensing Medical Boards. T.

ANSWER.—1. Yes. 2. Dr. H. D. Harison, Sault Ste. Marie, Mich.

BOOKS ON CLIMATOLOGY.

ROCHESTER, N. Y., Nov. 13, 1904.

To the Editor:—Kindly inform me of the names and where I may obtain the latest and best books on climatology?

A. C. REMINGTON.

ANSWER.—This query was answered in THE JOURNAL, March 19, 1904, p. 784.

Marriages.

BURTON WELLER, M.D., Toledo, Ohio, to Miss Edna Myers of Tiffin, Ohio, November 1.

BENJAMIN DORES PARISH, M.D., to Miss Helen Griffith, both of Philadelphia, November 16.

EVERETT H. BUTTERFIELD, M.D., Ottawa, Ill., to Miss Letitia Rothwell, in Chicago, November 3.

FREDERICK L. OSGOOD, M.D., to Miss Blanche M. Osgood, both of Saxton's River, Vt., October 26.

CLARENCE B. WEAN, M.D., Lorain, Ohio, to Miss Edith Anna Griswold of Kinsman, Ohio, October 12.

FRANK CLIFFORD CARLE, M.D., Garrison, Iowa, to Miss Georgia Wilson of Weltman, Iowa, October 7.

ORA K. MCKITTRICK, M.D., to Miss Susette Harper of Plainville, Ind., at Terre Haute, Ind., November 3.

BRUCE B. EVERALL, M.D., Monona, Iowa, to Miss Myrtle Trumpler of Des Moines, Iowa, November 16.

HARRY JACOB JONES, M.D., North English, Iowa, to Miss M. Gertrude Downing of Wellman, Iowa, November 9.

CLARENCE JOSEPH MCCUSKER, M.D., Portland, Ore., to Miss Clare Alena Campbell of West Newton, Iowa, October 26.

Deaths.

DeWitt Clinton Wade, M.D. Albany (N. Y.) Medical College, 1860, of Holly, Mich., a member of the American Medical Association; given an honorary degree by the University of Michigan in 1902; local surgeon of the Grand Trunk Railway; superintendent of the Holly Hospital; member and acting president of the Oakland County Medical Society; member of the Michigan State Medical Society, died in a hospital at Flint, Mich., from appendicitis, after operation, November 4, aged 68.

William H. Huntington, M.D. University of Vermont, Burlington, 1881, a member of the American Medical Association; for several years brigade surgeon in the Vermont National Guard, and surgeon general on the staff of Governor Stickney; president of the Vermont State Medical Society in 1900, died at his home in Rochester, Vt., from appendicitis, November 7, after an illness of three days, aged 47.

James Anthony Dibrell, M.D. Department of Medicine University of Pennsylvania, Philadelphia, 1870, a member of the American Medical Association and vice-president in 1901; twice president of the Arkansas Medical Society; a member and once president of the Little Rock Medical Society; for 15 years physician to the Arkansas Deaf Mute Institute; one of the founders of the Medical Department of the University of

Arkansas, dean since 1884, and professor of anatomy in that institution; secretary of the State Board of Health from 1879 to 1881; vice-president of the Sanitary Council of the Mississippi Valley, and one of the foremost surgeons of Arkansas, died at his home in Little Rock, November 12, from pneumonia, after an illness of one week, aged 58.

Charles H. Potter, M.D. Baltimore Medical College, 1898, a member of the American Medical Association; formerly connected with the Johns Hopkins Hospital; who had made a specialty of microscopic photography for medical works in which his reputation was international, and more recently was in charge of the micro-photographic department of the Tuberculosis Exposition held in Baltimore, died suddenly at his home in Baltimore, November 9, aged 50.

Abner D. Kimball, M.D. Rush Medical College, Chicago, 1860, assistant surgeon in the Forty-eighth and later in the Ninety-ninth Indiana Volunteer Infantry; some time president of the Grant County (Ind.) Medical Society; chief surgeon at the National Home for Disabled Volunteer Soldiers at Marion, Ind., died at his home in that place, November 11, from diabetes, aged 65.

Henry E. Allison, M.D. Dartmouth Medical College, Hanover, N. H., 1878, medical superintendent of the Matewan State Hospital for the Insane, a member of the American Medico-Psychological Association and Medical Society of the State of New York, died at his home from Bright's disease, after a long illness, November 12, aged 53.

W. S. Noblitt, M.D. Hospital College of Medicine, Louisville, who, after a controversy with the local board of health, secured a license to practice by order of the Supreme Court, died at his home in Honolulu, Hawaii, October 19, from typhoid fever, after an illness of one month, aged 36.

Charles H. Ludlow, M.D. Medical College of Ohio, Cincinnati, Ohio, 1902, who was found insensible at Hyatt Station, Ind., November 9, having been drugged, sandbagged and robbed of $5,000, died from concussion of the brain at his home in Covington, Ind., November 10.

Thomas L. Laliberte, M.D. Laval University Medical Department, Quebec, 1876, a member of the American Medical Association; prominent as a physician and politician, died at his home in East Minneapolis, Minn., November 5, after an illness of five months, aged 53.

Augustus George Holloway, M.D. Cleveland Medical College, 1854, assistant surgeon in the Fifty-first and One Hundred and Ninety-seventh Ohio Volunteer Infantry in the Civil War, died at his home in Decatur, Ind., November 4, after an illness of 18 months, aged 75.

D. Morrow Barrere, M.D. Miami Medical College, Cincinnati, 1878, a member of the American Medical Association, a prominent practitioner of Dayton, Ohio, died at his home in that city from pneumonia, November 5, after an illness of ten days, aged 54.

Frederick Lefew, M.D. University College of Medicine, Richmond, Va., 1900, a member of the Medical Society of Virginia and the Roanoke Medical Society, was stabbed in the breast two weeks ago, and died at his home in Roanoke, November 15.

Jacobus Pollatsek, M.D. Royal University, Buda Pesth, Hungary, 1878, some-time quarantine officer at Cairo, Egypt, died at the Harbor Emergency Hospital, San Francisco, presumably from poison self administered, November 6, aged 63.

Charles G. Cruickshank, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1876, local surgeon for the Santa Fe system, died suddenly from heart disease at his home in San Marcial, N. M., October 12.

Caleb F. Farrar, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1846, an officer in the Confederate service during the Civil War, died at his home in Kingston, Miss., November 3, aged 80.

Littleton R. Tull, M.D. McDowell Medical College, St. Louis, Mo., 1848, died at his home in Carrollton, Mo., where he had practiced for more than half a century, November 6, after an illness of several months, aged 83.

Frederick A. Treacy, M.D. College of Physicians and Surgeons, Chicago, 1901, a member of the American Medical Association, of Lewistown, Mont., died at Helena, Mont., from tuberculosis, October 21, aged 30.

J. Wallace Collins, M.D. Denver (Colo.) College of Medicine, 1888, formerly county physician and health officer of Teller, surgeon in the national guard, died at his home in Victor, Colo., October 31, from apoplexy.

Charles N. Branch, M.D., Jr., Medical College of Ohio, Cincinnati, 1891, of Anderson, died from tuberculosis at Wickenburg, Ariz., where he went for his health two years ago, October 29, aged 32.

Franklin S. Whaley, M.D. Berkshire Medical College, Pittsfield, Mass., 1844, who retired from practice about ten years ago, died recently at his home in Compton, Cal., aged 85.

Frederick Schade, M.D. University of Tübingen, Germany, 1852, a retired physician of St. Louis, died at his home in that city, October 18, from heart disease, aged 79.

William Bray, M.D. Iowa, 1886, of Dubuque, Iowa, died at Mercy Hospital in that city, November 8, from typhoid fever, after an illness of three months, aged 46.

Guilford H. Gunter, M.D. Department of Medicine of the University of Pennsylvania, 1881, died at his office in Camden, N. J., November 5, from uremia, aged 50.

Cassius L. Gurney, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878, died suddenly at his office in Doon, Iowa, from apoplexy, November 5, aged 62.

Rufus A. Shimpoch, M.D. Long Island College Hospital, Brooklyn, N. Y., 1860, died at his home in Gold Hill, N. C., October 30, from Bright's disease.

Cassius W. Hare, M.D. Medical College of Virginia, Richmond, 1886, died suddenly from apoplexy at his home in Brentsville, Va., November 10.

John William Knight, M.D. Albany (N. Y.) Medical College, for many years a practitioner of Walpole, N. H., died at Farmington, N. H., aged 82.

John Kerr, M.D. Western Reserve Medical College, Cleveland, 1848, died at his home in Cedar Falls, Iowa, November 8, after a brief illness, aged 85.

Henry L. Shireman, M.D. Toledo (Ohio) Medical College, 1885, died at his home in Nazareth, Pa., from paralysis, November 5, aged 63.

David A. Wood, M.D. Cleveland Medical College, 1872, died at his home in Norwalk, Ohio, after a long illness, October 30, aged 72.

J. Milton Welch, M.D. Ohio, 1878, died at his home in Los Angeles, Cal., November 6, after an illness of four months, aged 70.

William H. Oliver, M.D. University of Victoria College, Coburg, Ont., 1866, died at his home in Chicago, November 9, aged 80.

H. B. Pittman, M.D., died at his home in Hilladale, Pa., October 26, after a lingering illness, from dropsy and paralysis, aged 69.

William H. Gardner, M.D. Bellevue Hospital Medical College, New York City, 1873, died at his home in Rockwood, Pa., October 29.

George Walton, M.D. New York University, New York City, 1873, died at his home in St. Louis, Mo., November 8, aged 55.

Arthur Young, M.D. Rush Medical College, Chicago, 1853, died at his home in Prescott, Wis., October 20, aged 75.

John B. Wilson, M.D. Ohio, 1853, died at his home in Mansfield, Mass., October 31, aged 71.

Nathan M. Smith, M.D., was shot and killed in a quarrel in Washington, Kan., October 31.

Charles W. Arnold, M.D. Ohio, 1850, died at his home in East Townsend, Ohio, October 26.

Thomas C. Quinn, M.D., died at his home in New Vienna, Ohio, October 30, aged 75.

William Kean Foltz, M.D. Ohio, 1859, died at his home in Akron, Ohio, November 9.

Deaths Abroad.

P. Tillaux, M.D., professor of clinical surgery at Paris, president of the Académie de Médecine, co-editor of the *Tribune Médicale* and author of a popular manual of topographic anatomy, died at Paris, October 20, aged 70.

C. Milone, M.D., professor of anatomy at Buenos Ayres since 1884, when he left a similar position in Rome to make his home in Argentina, died at Buenos Ayres, September 30, aged 60.

M. Bartels, M.D., one of the most prominent physicians in Berlin and author of several important medico-anthropologic and ethnologic works, died at Berlin, October 22, aged 61.

C. H. Huppert, M.D., professor of medical chemistry at Prague until 1901, died there October 19, aged 73.

Book Notices.

FOOD INSPECTION AND ANALYSIS, for the Use of Public Analysts, Health Officers, Sanitary Chemists and Food Economists. By Albert E. Leach, B.It., Analyst of the Massachusetts State Board of Health. First Edition. First Thousand. Cloth. Pp. 787. With 120 Figures and 40 Full page Half-tones. Price, $7.50. New York: John Wiley & Sons. London: Chapman & Hall, Limited. 1904.

The fact is generally familiar to those concerned with public health matters that Massachusetts was the pioneer in establishing, some twenty years ago, a practical system of food and drug inspection. It is also universally recognized that the Massachusetts State Board of Health has in various ways given a powerful impetus to sanitary work of all kinds. Its activity has been displayed both in the original investigation of scientific problems and in the promotion of the publication of books and monographs dealing with the various undertakings in which it has been engaged. The present work on food inspection and analysis must rank as one of the most important that has issued from its laboratories. The book deals with the following topics: Food analysis and state control; the laboratory and its equipment; food, its functions, proximate components and nutritive value; general analytical methods; the microscope in food analysis; milk and milk products; flesh foods; eggs, cereals, legumes, etc.; tea, coffee and cocoa; spices; edible oils and fats; sugar and saccharine products; alcoholic beverages; vinegar; artificial food colors; food preservatives; artificial sweeteners; canned vegetables and fruits products; flavoring extracts. Considerable attention is devoted to the use of the microscope in food analysis. Well-chosen figures illustrating the microscopic structure of powdered tea, coffee, cocoa and the spices appear in the text, and a valuable set of photomicrographs (40 plates) is appended to the volume. The book is no mere literary compilation. The methods that it details have been mastered rather than copied, and we are given the full benefit of a wide, first-hand laboratory experience. It is not too much to say of the work that it takes its place at once as the authoritative standard in the English language.

A MANUAL OF GENERAL EXPERIMENTAL PATHOLOGY, for Students and Practitioners. By Walter Sydney Lazarus-Barlow, B.A., B.C., M.D., F.R.C.P., Director of the Cancer Research Laboratories of the Middlesex Hospital. Second Edition. Cloth. Pp. 736. Price, $6.50 net. Philadelphia: P. Blakiston's Son & Co. 1904.

During the five years that have elapsed since the appearance of the first edition of this book, the advancements in pathology, particularly along certain lines, have made it necessary to practically rewrite much of the work, and this is what the author has done. The greatest changes are in the chapters on the pathology of the blood, on inflammation and on the pathology of infection and immunity. The need of a more uniform classification of the varieties of leucocytes is apparent, as the terms applied to the same kind of cell by different writers are confusing to one not perfectly familiar with the subject. The greatest advancements in the future are to be hoped for along clinical lines, hence "The Pathology of the Blood Plasma" forms a very interesting chapter. The modern conception of infection and immunity as set forth by Ehrlich in his side chain theory is well presented. The various theories concerning the etiology of carcinoma and sarcoma, about which so much interest has centered of late, are clearly stated, and while the author leaves the matter still an open question, it is plain that he leans toward the non-parasite side. The illustrations are few in number, only 33, but the clearness of the text makes up largely for the deficiency. The general makeup of the volume is good.

HEALTH, STRENGTH AND POWER. By Dudley Allen Sargent, A.M., M.D., Director of Hemenway Gymnasium, Harvard University. Illustrated. Cloth. Pp. 276. New York and Boston: H. M. Caldwell Co.

This very readable book discusses the universal need for exercise, how and where it should be taken, what kinds are best for all ages and ends with a complete system of fully illustrated movements for individual use without apparatus. They will not particularly interest the athlete or the one who already has access to means of exercise; to one of sedentary habits they are to be recommended. The author's competency to speak on the subject leaves nothing to be desired. He adds excellent advice as to bathing and food. Although an enthusiastic advocate of athletic sports for women, he cautions that their standards should be carefully maintained far below those of men and highly competitive matches avoided. The latter, he says, develop women away from some of their most desirable feminine qualities. In speaking of golf as a valuable sport for women he refers to its power in making the waist and abdomen more fit for the requirements of child birth. The publishers have made the book very presentable. Either they or the author are responsible, however, for the ancient spelling: "vigour," "odour," "favour," "labour," which look very odd in this country.

DISEASES OF THE NOSE AND THROAT. By D. Braden Kyle, M.D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Third Edition, Thoroughly Revised and Enlarged. With 175 Illustrations and 6 Chromo-lithographic Plates. Cloth. Pp. 669. Price, $4.00 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

This edition of this very valuable work contains a number of important additions to the previous ones. The chief changes made are in the chapters on "Keratosis," "Epidemic Influenza" and "Correction of Nasal Deformities by the Paraffin Method." "Hay Fever" and "Septal Deformities" are treated more fully than in the last edition. Of special interest is the consideration of the chemistry of the salivary and nasal secretions. The author believes that much can be determined in regard to the chemistry of the tissues by an examination of a physiologic secrétion such as the saliva and that much may be accomplished in the cure of certain diseases by correcting abnormal chemical conditions, notably hyperacidity and hyperalkalinity, the former of which he usually overcomes by free administration of benzoate of soda and the latter by boric acid. It is impossible to do justice to his views in a brief space, consequently the reader is referred to the article with the promise that a careful perusal will more than repay him.

THE THEORY AND PRACTICE OF INFANT FEEDING, with Notes on Development. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children at the New York Post-graduate Medical School and Hospital. Second Edition, Revised. With Numerous Illustrations. Cloth. Pp. 342. Price, $2.25. New York: Wm. Wood & Co. 1904.

The first portion of this book differs somewhat from other books on infant feeding. Dr. Chapin has made comparative studies of the digestive tracts of young animals and concludes therefrom that the digestive system of each animal is particularly suited to its natural food and that as the digestive tracts of young animals must be, in a general way, like that of their parents, the milk of one animal is not suited for the young of another species. Dr. Chapin considers that the trouble caused by the substitution of some other milk in infant feeding is probably due to the difference in the digestive system. In part 2 Dr. Chapin gives simply and practically the various methods of testing milk, etc. Part 3, on "Practical Feeding," comprises the care and diet of the mother and directions for preparing infants' food. Part 4, "The Growth and Development of Infants," contains tables of measurements and weight of infants at different ages. The book is comprehensive and practical.

THE MOTHER'S MANUAL. A Month by Month Guide for Young Mothers. By Emelyn Lincoln Coolidge, M.D., Visiting Physician of the Out-patient Department of the Babies' Hospital, New York. Illustrated. Cloth. Pp. 262. Price, $1.00 net. New York: A. S. Barnes & Co. 1904.

Among "mothers' guides" this book may be distinguished by its simplicity. Some matters seem to the young mother too simple to ask the physician or even a lay friend about and so she blunderingly worries along—unless she possesses a book which, like the one discussed, tells every little detail. The book is almost too full and may tempt some mothers to depend on home treatment too much. We certainly do not approve of the mention in such a book of preparations containing 17 and 20 per cent. of alcohol with the statement that they are of value between meals for infants and children with marasmus, etc., especially in view of the danger that the mother will take into her own hands the prescribing and administering of them. On the whole, however, Dr. Coolidge brings out very clearly at what times the mother should call a physician, how she should carefully follow his advice and that she should be-

ware of patent medicines, which "have no place in the household."

A Text-Book of Human Histology. Including Microscopic Technic. By Drs. A. A. Böhm and M. von Davidoff, of Munich, and G. Carl Huber, M.D., Professor of Histology and Embryology in the University of Michigan, Ann Arbor. Second Edition, Thoroughly Revised and Enlarged. With 376 Original Illustrations. Flexible Cloth. Pp. 525. Price, $3.50 net. Philadelphia, New York, London: W. B. Saunders & Co. 1904.

The second edition of this valuable text-book on histology appears in a form which is a great improvement over that of its predecessor. Although the text has been added to and the number of illustrations increased by 26 new plates, the volume is only half the thickness of the first edition, owing to the light paper and the flexible cover. The additions to the text are found chiefly in the sections dealing with histologic technic, but there is also a new section on the hemolymph glands, giving the results of Warthin's researches. The section on neuroglia is also enlarged. The new illustrations, many of them from Sobotta's atlas, show a tendency toward realism which is highly to be commended in a book designed for students.

Clinical Diagnostic Bacteriology, Including Serum Diagnosis and Cytodiagnosis. By Alfred C. Coles, M.D., D.Sc., F.R.S. Edin. With Colored Plates. Cloth. Pp. 237. Price, $2.75 net. London: J. and A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1904.

As is indicated in the title, this book is intended for the use of the clinician, but it inclines strongly toward the laboratory rather than the clinical side of diagnosis. The author has endeavored to place before the reader the methods of examination best adapted for practical diagnostic purposes, and has also included an account of some research work made by him on the acid-fast bacteria. Unfortunately for the practitioner too much space (about one-third of the book) is devoted to this subject, although it will prove of interest to the research worker. Such bacteriologic examinations as involve elaborate investigation, such as cholera and glanders, have been omitted entirely; and, judging from its omission, we presume the author included the typhoid bacillus in this class, an opinion to which we wish to take exception. There is also a short account of serum diagnosis and cyto-diagnosis, but not sufficient to be of more than passing interest.

Hand-Book of Physiology. By W. D. Halliburton, M.D., F.R.S., Professor of Physiology, King's College, London. Nineteenth Edition, with Nearly Seven Hundred Illustrations, Including Some Colored Plates. Cloth. Pp. 901. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1904.

Considerable changes in the arrangement of the exercises have been made in this edition. A new first lesson on the detection of the elements contained in substances of physiologic interest has been added, and the fats, which were somewhat meagerly treated in former editions, have now been made the subject of a separate lesson. Many new exercises have been inserted in other places, and the advanced lessons on milk, pancreatic digestion, muscle and Kjeldahl's method have been rewritten, bringing the work abreast of advances in science without detracting from its value as a serviceable and practical laboratory guide.

A Course in Qualitative Inorganic Chemistry. By Arthur L. Green, Ph.G., M.D., Ph.D., Dean and Professor of Chemistry, School of Pharmacy, Purdue University, and Charles E. Vanderkleed, Ph.C., B.S., A.C. Analytical Chemist with the H. K. Mulford Co. Fourth Edition. Cloth. Pp. 158. Lafayette, Ind.: Arthur L. Green.

This little book is a well-arranged laboratory manual, one which will be received with a full measure of appreciation by the student. It is provided with a thumb index, part of which can be used from before backward and vice versa.

Miscellany.

Syme's Staff.—In Dr. Parker Sym's article on Prostatic Obstruction in The Journal, November 5, page 1381, a typographical error made "Syme's staff" read Sym's staff.

Legible Type on Labels.—Mr. W. Bodemann of Chicago, president of the State Board of Pharmacy, in the *Practical Druggist*, calls the attention of manufacturers to the small type in which it is customary to print the dose stated on bottles of hypodermic tablets, granules, small pills and similar goods. He says that it requires a microscope in some cases to distinguish between 1/3 and 1/8 grain, or between 1/10 and 1/100 grain, and thinks the figures should be large and distinct. He also calls the attention of manufacturers of synthetic preparations to the desirability of stating on each package the solvent of the chemical, its dose and whether or not it is hygroscopic.

Rhythmic Nose-Pulling as a Resuscitating Measure.—Young ladies will not consider it so genteel to faint, now that Panyrek of Prague has announced that vigorous pulling of the nose should be tried as a means of reviving persons in a faint or asphyxiated from any cause. He explains its effect as due to reflex stimulation of the vasomotor nerves of the cortex and the centers of respiration and circulation by the energetic, rhythmical movements of the nose upward and downward, repeated several times. The sudden stimulation of the sensory nerves thus effected is reflected to the vasomotor nerves above and the respiratory and circulatory centers. The principle is somewhat similar to that of rhythmic traction of the tongue, which is now a widely adopted means of resuscitation.

Jamaica as a Health Resort.—Dr. E. E. Lewis, in a recent issue of the *Journal of Balneology and Climatology* advocates the claims of Jamaica as a health resort. He says that the tradition attaching to Jamaica as an unhealthy station is rapidly being dissipated, and the pretensions of this beautiful island to be regarded as a health resort are meeting with many advocates. Of the total area of the island more than half is 1,000 feet above sea level. Cool nights, a temperate wind—"the doctor" as it is termed—and an equable climate go far to commend Jamaica to both the sick and the well. Mineral springs at Bath, some forty-five miles from Kingston, possess the same mineral constituents (but in larger quantities) as those of Aix-la-Chapelle, Bareges and Bagneres de Luchon.

Open-Air Treatment for Tubercular Children.—The *American Journal of Nursing* states that the open-air treatment of tuberculosis is being tried at the Children's Hospital, Boston. A shack, twenty by forty feet, lighted by ten windows which open like a transom, has been built at Wellesley Hills and connected by a covered passageway with the temporary building used as the convalescent home of the Children's Hospital. The windows are kept open day and night. The children sleep in flannel night gowns, flannel night caps, woolen bed socks and between blankets. In the daytime they wear flannel underwear, dresses, sweaters and woolen hoods. There has not been a case of sore throat or cold in the head and the appetites of all have improved. The children are those who have been treated in the hospital for tubercular disease of the joints and bones, and tubercular empyema and peritonitis.

Anatomic Proof of Healing of Miliary Tuberculosis Under Tuberculin.—Spengler of Davos writes to the *Ztft. f. Hyg. und Inf.-Krankheiten*, XLVII, 1, to describe a healed case of miliary tuberculosis of the lungs. The patient was a consumptive belonging to a tuberculous family. In 1900 there was a miliary dissemination of the tuberculosis over the hitherto exempt portions of the lungs. He was treated by tuberculin in stages, the "Etappen-Tuberculin" treatment, and was apparently completely cured after the sixth series of injections, which closed in August, 1904. He succumbed a few months later to a brain affection, probably an abscess. Examination of the lungs alone was allowed. The lung process had entirely healed. Each single nodule was found enclosed in a wall of connective tissue or surrounded by a rampart of leucocytes. Not a trace of tubercle bacilli could be discovered.

Alcohol Dressings for Superficial Lesions.—A. Pfuhl of Hanover lauds the Salzwedel method of alcohol applications as the simplest, cheapest and best method of treating cutaneous superficial wounds, inflammations of connective tissue, swollen glands, furuncles, inflamed periosteum and bursæ, and also for deep lying lesions, inflamed joints, glands and body cavities. He finds that 40 to 50 per cent. alcohol displays much

the strongest bactericidal power. Fluid alcohol does not penetrate deep into the tissues, but applied in the form of compresses covered airtight the fumes of the alcohol have great penetrating power. He writes from an experience of 117 cases thus treated. Lentz has always found the alcohol dressings an effective mode of treating chilblains. A piece of gauze folded in eight thicknesses is moistened with 70 per cent alcohol, applied to the part and covered with a piece of perforated oiled silk or rubber tissue, the whole held in place with a bandage.

Effects of Deprivation of Salt on the Nerves.—Vincent has been making a systematic study of hyperchloridation and hypochloridation in various nervous affections. He found that 12 to 15 gm. of salt taken by hysterics in addition to their usual food, invariably aggravated their nervous symptoms and caused an outbreak of symptoms in the latent cases. Diarrhea and vomiting were sometimes noted, much relieving the patients by the evacuation of the excess of salt. It seems to affect latent hysteria in the same way as alcohol, lead, mercury or other poisons, aggravating pre-existing morbid nervous tendencies. Claude has been studying the effect of deprivation of salt in health, and has become convinced that the intake of salt has a much greater influence on the nutrition than has been hitherto recognized. Cramps, dyspeptic troubles, lassitude and incapacity to work were noted during the five days of hypochloridation, while the restoration of the usual modicum of salt rapidly restored conditions to normal. Their research was reported to the Paris Soc. Méd. des Hôp., July 8, and they theorized to explain the effects observed, advocating a trial of transient deprivation of salt in certain nervous affections, especially in hysteria.

Lumbar Puncture in Headache of Bright's Disease.—Legrain quotes P. Marie and cites a case from his own experience to demonstrate the benefit liable to be derived from lumbar puncture in case of the persisting headache of advanced Bright's disease. It has also proved beneficial in the headache of lead poisoning. In a communication to the *Progrès Médical*, XXXII, 44, he reiterates that lumbar puncture may be repeated without danger several times in succession at intervals of two to four weeks. It causes no disturbance if done aseptically, with a fine, sharp needle, the subject reclining for two or three hours afterward. His patient was a worker on copper, 56 years old, the diagnosis being uremia with vertigo and epileptiform seizures followed by transient cerebral disturbances. An attack of almost intolerable headache recurred every day, or rather night, sometimes as many as two or three in the twenty-four hours. After failure of all other measures about 12 c.c. of cerebrospinal fluid were withdrawn by lumbar puncture. There was no hypertension, the fluid escaped a drop at a time, the patient seated. Seven punctures were made in all, the patient clamoring for them when the headache became unendurable. Each was invariably followed by subsidence of the pain for two days at least. The amount of fluid withdrawn ranged from 12 to 15 c.c.. The epileptiform seizures became much less frequent after the second puncture. As the cerebrospinal fluid in this case never showed signs of abnormal pressure, the benefit from the punctures must be ascribed to its extra toxicity. In the other cases on record the fluid escaped under pressure and the relief from pressure was evidently a factor in the benefit derived.

Veratrum Viride in Puerperal Eclampsia.—Dr. René de Cotret eulogized this method of treatment of puerperal eclampsia in a communication to the Congress of French-Speaking Physicians at Montreal in June. He says that he has never had a mishap from its use, but has found it decidedly beneficial. He insists that it is free from danger, even when large doses are given, provided the patient is kept in the horizontal position. He uses the fluid extract or tincture, and always by hypodermic injection. The dose varies according to the pulse. With a pulse of 120 or over, he gives, at once and without fear, from 20 to 25 drops of the fluid extract; with a pulse of 100 he gives 20 drops. If the pulse is below 100 he never gives less than 10 drops for the first dose. About thirty-five minutes are required for the drug to exert its principal action and slow the pulse. The pulse must be reduced below 60 to control the convulsions. Even at 60 they sometimes reappear. If the pulse is not down to 56 or 50 by the end of thirty-five minutes, a further injection of 5 to 10 drops should be made. It is truly astonishing, he remarks, the way in which the pulse drops and the convulsions cease in response to the injections. When the convulsions are frequent and keep up before the drug has had time to work, he gives a few whiffs of chloroform as a convulsion commences, to tide the patient over this interval. She must be kept under the influence of the veratrum, that is, the pulse must be kept under 60, for twelve to twenty-four hours. If the pulse becomes too slow, 25 to 30 beats, a stimulating injection, preferably of morphin, one-fourth of a grain, will accelerate it at once. The Italians have lately been using veratrum viride in eclampsia with equal confidence and good results, especially the Florence school.

Ligature of Subclavian Artery in Aneurism.—De Garay was the first surgeon in Mexico to extirpate the sac in treatment of aneurism, his first case dating from 1893. The aneurism in this instance was in the femoral artery. He has since perfected a method of ligating the subclavian artery which he has successfully performed in 3 cases of traumatic aneurism of the axillary artery. It is a modification of the Lisfranc technic and he describes it in detail in the *Escuela de Medicina*, XVIII, No. 17. He advocates it as a less serious operation than extirpation of the sac, while the results show that it is harmless and answers the same purpose. He reaches the subclavian artery by a vertical incision 5 to 6 cm. long, about 1 cm. inside of the center of the clavicle, supplemented by a short perpendicular incision, thus forming an L, avoiding the external jugular vein. The inner lip of the incision is then detached back to the margin of the sterno-mastoid. The aponeurosis is then incised, or cut with scissors, below the omo-hyoid muscle, without opening the sheath of the subclavian vein. By this means the external jugular may be safely drawn to one side of the field of operation and the subclavian vein is protected by the fascia. It is advisable to remove any ganglia and fatty tissue obstructing the view. He commences by outlining the external jugular, making his incision inside of it, and thus leaving it undisturbed in the flap, while the subclavian vein is likewise undisturbed in its sheath, neither coming into view during the operation. The field is well exposed, and the space between the scaleni, the nerves passing to the brachial plexus, etc., are readily recognized. The subclavian artery can then be easily ligated, no forceps being required in his 3 cases nor the slightest inconvenience encountered, even in the cases of much tumefaction of the axillary artery. The pains were reduced almost at once, and the member did not grow cold nor exhibit signs of gangrene in any instance. The wound was 6 cm. deep, but rapidly healed. The ligature thread fell off the tenth day.

The Surgical Conscience.—At the meeting of the Montreal Medical Society of March 22, Dr. Coyteux-Prevost of Ottawa delivered an address, but instead of recounting his successes as a surgeon, he reviewed the fatalities in about a thousand operations. Fifty-nine deaths in all, the patients succumbing notwithstanding or on account of the operation. The largest percentage was in cases of acute obstruction of the intestines, and the extensive ravages found in apparently the mildest cases now impel him to operate without delay. The lesson he has learned from the 10 fatal cases of appendicitis is to operate in every case seen before the end of the third day. He discusses whether the too tardy operation hastened the fatal termination or whether the final result would have been the same under expectant treatment. He remarks that the number of cases of appendicitis seems to be increasing every day and it alone is almost enough to support the medical man. Guided by experience we will soon be able to reduce to zero the mortality of operative statistics. Then will come the golden age of abdominal surgery, but the general practitioner will then feel justified in operating, and the gynecologic specialists will become the victims of the application of a sort of Monroe doc-

trine. It is to be hoped, however, he added, that a few women will still be left weary of their ovaries or sighing for the restitution of relaxed organs. He concluded his review of the tombs in his practice by confessing that his hesitancy and trust in expectant treatment had cost lives, and that he deserved to be stoned, "let that surgeon cast the first stone who does not carry around with him a little cemetery in some corner of his memory." His address is published in the *Revue Médicale du Canada* of the corresponding date. We have not learned of his having been stoned to death as yet.

State Boards of Registration.

COMING EXAMINATIONS.

New Mexico Board of Health, Santa Fe, December 5. Secretary, R. D. Black, M.D., Las Vegas.

Ohio State Board of Medical Registration and Examination, Columbus, December 13-15. Secretary, Frank Winders, M.D., Columbus.

State Medical Examining Boards of Delaware, Wilmington and Dover, December 13-15. Secretary, P. W. Tomlinson, M.D., Wilmington.

The Medical Examining Board of Virginia, Richmond, December 13-16. Secretary, R. S. Martin, M.D., Stuart.

Board of Medical Examiners of Maryland, Baltimore, December 14-17. Secretary, J. McP. Scott, M.D., Hagerstown.

Missouri State Board of Health, St. Louis University, St. Louis, December 19-21. Secretary, W. T. Morrow, M.D., Kansas City.

Iowa State Board of Medical Examiners, Capitol Building, Des Moines, December 21-22. Secretary, J. F. Kennedy, M.D., Des Moines.

Oklahoma Medical Examining Board, Guthrie, December 28. Secretary, E. E. Cowdrick, M.D., Enid.

AMERICAN CONFEDERATION OF RECIPROCATING EXAMINING AND LICENSING MEDICAL BOARDS.

Semi-Annual Meeting, held in St. Louis, Oct. 25, 1904.

The President, Dr. W. A. Spurgeon, Muncie, Ind., in the Chair.

This report is concluded from THE JOURNAL, November 5, page 1407. In that issue the schedule of questions for examination was referred to as having been unanimously adopted. It was so adopted, but by a later motion was held over until the next meeting for further consideration. The same action—postponement for a later final action—was taken in the case of the following committee reports:

Uniform Entrance and Graduation Requirements.

The committee on uniform entrance and graduation requirements recommended as a minimum entrance requirement to medical colleges a legitimate and duly accredited high school diploma, or its equivalent, and that such credential be simply treated as a credential of identification, and that its acceptance shall be dependent upon a certain number of credits, the same to be determined later. The committee recommended further that a medical diploma in the future be simply treated as a matter of identification, and that the medical course must consist of at least four thousand hours; that the division of subjects under this limit shall be in hours multiples of twenty-five; that no college shall be recognized that falls below this standard over 25 per cent. in any one branch, or over 10 per cent. in the total.

Advanced Standing.

The committee on advanced standing suggested that graduates in dentistry and veterinary medicine, and holders of baccalaureate degrees, or equivalent, from a reputable college or university may be given time credits not exceeding one year, provided that the applicant has had at least 40 hours in physics, 144 hours in chemistry, 24 hours in osteology, 292 hours in anatomy, 124 hours in histology, 85 hours in embryology, 145 hours in physiology and 46 hours in materia medica; and, provided that the applicant for such time credits satisfies the professor in charge of the various subjects as to his proficiency in the subjects for which he seeks time credit. Further, that in case of transfer of students from one medical school to another, the dean of the recipient institution must secure an official statement from the school from which the student comes as to the latter's educational and moral status, and no student shall be advanced to a higher class in his own school or any other medical school who has more than two conditions in his previous year's work, these conditions to be removed before the end of the school year on which the student enters. But no student shall be permitted to enter the fourth year until all conditions of the third year shall have been removed.

The committee on uniformity of forms also reported and was continued to report further at the next meeting, to be held in Indianapolis, on call of the secretary. The present incumbents in office were re-elected to serve for the ensuing year. The secretary is Dr. B. D. Harison, Sault Ste. Marie, Mich.

The following states were represented at the meeting:

Indiana.—W. S. Spurgeon.
Michigan.—Wm. Bell and B. D. Harison.
Wisconsin.—J. B. Stevens, W. T. Sarles, L. F. Bennett, A. P. Andrus, F. P. Klahr, J. R. Curreen and F. A. Forbeck.
Kentucky.—J. N. McCormack and C. A. Mayer.
Iowa.—J. A. McKiveen and J. H. Sams.
Nebraska.—B. F. Bailey.
Illinois.—O. W. Webster, J. A. Egan and W. H. Hipp.
Ohio.—H. E. Beebe and S. B. McGavran.
Colorado.—S. D. Van Meter.
Kansas.—O. F. Lewis and C. B. Johnston.

Louisiana October Report.—Dr. Felix A. Larue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Oct. 21-22, 1904. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number examined was 25, of whom 17 passed and 8 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical College of South Carolina	(1901)	92.6
University of the South, Sewanee	(1904)	78.8
Med. Dept., Tulane Univ.	(1904) 86.6, 91.4; (1899)	91.2
Laval University, Montreal	(1903)	80.6
Med. Dept., Columbian Univ., Washington, D. C.	(1904)	86.4
Woman's Med. Coll. of Pennsylvania	(1904) 87.4,	85.0
University of Michigan	(1858)	82.4
University of Tennessee	(1904)	81.4
Nat. Med. Univ., Chicago	(1904)	88.2
Maryland Medical College	(1904)	78.8
Kentucky University	(1903) 75, (1904)	82.4
Memphis Hospital Medical College	(1899)	77.0
Bellevue Hospital Medical College	(1898)	86.4

FAILED.

Univ. of the South, Sewanee	(1903) 67.2, (1904) 58.8, 73,	73.4
University of Louisville	(1902)	67.6
Memphis Hospital Medical College	(1900)	64.0
Flint University	(1903) 63.6, (1904)	67.0

Montana October Report.—Dr. William C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, Oct. 4-5, 1904. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number examined was 20, of whom 15 passed and 5 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Trinity Medical College, Toronto	(1903)	84.6
University Medical College, Kansas City, Mo.	(1903)	76.0
University of Michigan	(1904)	83.2
Kentucky University	(1904)	75.5
Detroit College of Medicine	(1904)	75.1
Northwestern University	(1904)	78.3
University of Illinois	(1904)	75.9
College of P. and S., New York	(1904)	87.5
Imp. Alexanders Univ., Finland	(1894)	*78.2
Queen's Univ., Kingston, Ont.	(1903)	75.4
Rush Medical College	(1903) 86.3, (1902)	85.6
St. Louis College P. and S.	(1905)	†78.6
Bellevue Hospital Medical College	(1894)	79.8
College of P. and S., Kansas City, Kan.	(1904)	75.2

FAILED.

Hahnemann Medical College, Philadelphia	(1901)	66.4
New York University	(1893)	44.9
Kansas City Medical College	(1895)	47.7
Howard Medical College, Washington, D. C.	(1892)	57.1
Dunham Medical College, Chicago	(1901),	63.6

* Second examination. †Third examination.

The Public Service.

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Nov. 12, 1904:

Williamson, L. P., asst.-surgeon, leave of absence extended fifteen days.

Owen, Wm. O., surgeon, left Fort Logan, Colo., on thirty days' leave.

Sweazey, Verge E., asst.-surgeon, relieved from duty at U. S. Army General Hospital, Presidio of San Francisco, and ordered to Fort Mackenzie, Wyo., for duty.

Rutherford, Henry H., asst.-surgeon, relieved from duty at Fort Mackenzie, Wyo., and ordered to the U. S. Army General Hospital, Presidio of San Francisco.

Phillips, Jno. L., surgeon, ordered to take charge of the office of the chief surgeon, Department of the East, during absence of Col. Valery Havard, chief surgeon.

Raymond, Thos. U., surgeon, relieved from duty at the Louisiana Purchase Exposition, St. Louis, and ordered to Fort Assiniboine, Mont., for duty.

Metcalfe, R. F., asst.-surgeon, sick leave of absence extended thirty days.

Brown, Polk D., Johnson, Charles W., and Warriner Benjamin R., contract surgeons, Sorber, Ord M., and Tignor, Edwin F., contract dental surgeons, sailed on the *Sherman* November 1 from San Francisco for Philippine service.

Wertenbaker, Clark L., contract surgeon, ordered from his home at Cleveland, Ohio, to Madison Barracks, N. Y., for duty.

Smith, Rodney D., contract surgeon, granted leave of absence for three months.

Guittard, Alwin M., contract surgeon, granted an extension of one month to his leave of absence.

Nash, Francis S., contract surgeon, granted leave of absence for four months.

Woods, Oscar W., contract surgeon, returned to duty October 31, at Vancouver Barracks, Wash., from leave of absence for two months.

Trueholtz, Clarence A., contract surgeon, left General Hospital, Fort Bayard, N. M., November 5, on leave of absence for two months.

Dade, Waller H., contract surgeon, granted leave of absence for one month on account of sickness at the expiration of his present leave of absence.

Reagles, James, contract surgeon, left Fort Yellowstone, Wyo., November 7, for duty at Fort Keogh, Mont.

Adair, George F., contract surgeon, left Fort Du Pont, Del., November 9, for his proper station, Fort Wadsworth, N. Y.

Merrick, John N., contract surgeon, granted leave of absence for two months.

Turner, Samuel S., contract surgeon, granted leave of absence for four months.

Navy Changes.

Changes in the medical corps of the Navy, week ending November 12, 1904:

Lewis, D. G., medical inspector, detached from the *New York* and ordered to the *Chicago*.

Furlong, F. M., P. A. surgeon, detached from the *Chicago* and ordered to the *New York*.

Brown, E. M., asst.-surgeon, detached from the *New York* and ordered to the *Chicago*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ending Nov. 9, 1904:

Williams, L. L., asst.-surgeon general, granted leave of absence for eight days from November 7.

Kalloch, P. C., surgeon, granted leave of absence for two days from November 8.

Blue, Rupert, P. A. surgeon, detailed to represent the service at convention of League of California Municipalities at Santa Ana, Cal., November 16-18.

Clark, Taliaferro, P. A. surgeon, on being relieved at Baltimore, Md., by Asst.-surgeon J. W. Schereschewsky, to rejoin station at Philadelphia.

Anderson, J. F., P. A. surgeon, granted leave of absence for seven days from Nov. 9, 1904, under Paragraph 191 of the Regulations.

Billings, W. C., P. A. surgeon, to proceed to St. John, N. B., for exclusive duty in connection with inspection aliens.

McClintic, T. B., P. A. surgeon, granted extension of leave of absence for twenty-three days from November 7.

Schereschewsky, J. W., asst.-surgeon, on completion of examination to determine fitness for promotion to the grade of P. A. surgeon, relieved from duty at the Immigration Depot, New York, and directed to proceed to Baltimore for exclusive duty in connection with the inspection of aliens.

Bafford, M. V., A. A. surgeon, granted leave of absence on account of sickness for four days from October 21.

Roehrig, A. M., pharmacist, Department letter of Sept. 1, 1904, granting leave of absence for thirty days, amended to read twenty-five days from Sept. 12 to Nov. 7, 1904.

Miller, Chas., pharmacist, granted leave of absence for fourteen days from November 10.

Health Report.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Nov. 11, 1904:

SMALLPOX—UNITED STATES.

Illinois: Chicago, Oct. 30-Nov. 5, 28 cases, 2 deaths; East St. Louis, Aug. 15-Oct. 29, 200 cases, 25 deaths.
Louisiana: New Orleans, Oct. 30-Nov. 5, 1 case.
Michigan: Oct. 30-Nov. 5, at 50 places, present: Detroit, 1 case.
Minnesota: Oct. 23-31, Hennepin Co., 8 cases; Todd Co., 1 case.
Missouri: St. Louis, Nov. 1-7, 7 cases, 1 death.
New York: New York City, Oct. 30-Nov. 5, 2 cases.
Ohio: Canton, Oct. 16-22, 3 cases; Toledo, Oct. 23-29, 1 case.
Pennsylvania: Philadelphia, Oct. 30-Nov. 5, 2 cases.
Wisconsin: Milwaukee, Oct. 30-Nov. 5, 22 cases.

SMALLPOX—FOREIGN.

Austria-Hungary: Prague, Oct. 16-22, 4 cases.
Brazil: Pernambuco, Sept. 30-Oct. 13, 43 deaths; Rio de Janeiro, Oct. 3-9, 236 cases, 115 deaths.
France: Paris, Oct. 16-22, 7 cases, 1 death.
Great Britain: Bradford, Oct. 9-22, 4 cases; Oct. 16-22, Manchester, 3 cases; Newcastle-on-Tyne, 17 cases, 2 deaths; Nottingham, 6 cases, 1 death.
India: Madras, Oct. 2-8, 1 death.
Italy: Catania, Oct. 21-27, 1 death; Palermo, Oct. 16-22, 1 case, 1 deaths.
Russia: Moscow, Oct. 23-29, 4 cases; St. Petersburg, Oct. 19-25, 5 cases, 1 death; Warsaw, Oct. 20-26, 19 deaths.
Turkey: Constantinople, Oct. 17-23, 10 deaths.
West Indies: Barbados, Oct. 25, 2 cases on British bark *Buenaada*, from Rosario.

CHOLERA.

India: Bombay, Oct. 5-11, 7 deaths; Madras, Oct. 2-8, 6 deaths.
Russian Empire: Saratov Province, Saratov, Sept. 27-Oct. 7, 18 cases, 9 deaths; Trans-Caspian District, Sept. 25-Oct. 2, 11 cases, 5 deaths; Trans-Caucasia, Baku, Sept. 28-Oct. 11, 191 cases, 114 deaths.
Turkey: Sept. 27-Oct. 3, 233 cases, 160 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Oct. 3-9, 1 case.
Cuba: Habana, Oct. 26, 1 case from American S. S. *Havana* from Mexico.
Mexico: Texistepec, Oct. 23-29, 47 cases, 12 deaths; Merida, Oct. 23-29, 1 case.

PLAGUE.

Africa: Port Elisabeth, Oct. 2-8, 1 case.
Australia: Brisbane, Sept. 10-24, 1 case, 1 death; Perth, Sept. 5-24, 4 cases, 1 death; Sydney, Sept. 12-26, 2 cases, 2 deaths.
Brazil: Rio de Janeiro, Oct. 3-9, 43 cases, 15 deaths.
Egypt: Oct. 1-7, Alexandria, 4 cases, 2 deaths; Port Said, 1 death.
Formosa: Sept. 1-30, 4 cases, 3 deaths.
India: Bombay, Oct. 5-11, 71 deaths; Karachi, Oct. 3-9, 12 cases, 13 deaths; Madras, Oct. 1-7, 1 case.
Peru: Oct. 1, Arica, present; Eten, present; Pacasmayo, present; Sept. 25 Oct. 1, Callao, 1 case; Lima, 11 cases.
Straits Settlements: Singapore, Sept. 22-28, 2 deaths.

Society Proceedings.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, Oct. 6, 1904.

The President, Dr. Richard C. Norris, in the Chair.

The Intermediate Repair of the Cervix.

DR. BARTON COOKE HIRST declared that experience has demonstrated that intermediate repair after the fifth day gives the best results. This fact dictates the time for the repair of all the pelvic injuries, if the cervix must also be repaired. To give special attention to the community at large Dr. Hirst recommended that the poorer classes be confined in well-appointed and intelligently managed hospitals, and that the wealthier classes be attended by their family physicians under the supervision of a specialist, who could deal with complications in labor, examine the patient during the puerperium, repairing whatever damage has been done, and make the final examination at the end of the puerperium.

The Immediate Repair of the Pelvic Floor and Perineum.

DR. EDWARD P. DAVIS said that when the uterus is well contracted, when inspection of the cervix reveals no laceration with bleeding, and when torn vessels in the posterior segment of the pelvic floor are not bleeding, that persistent hemorrhage is caused by a laceration of the vulva or anterior segment of the pelvic floor, and that on inspection a positive diagnosis can be readily made. Treatment may be expectant or by suture. Lacerations of considerable extent are apt to cause prolapse, etc., and primary closure by fine or medium sized chromicized catgut is satisfactory. If in extensive laceration high up it is impossible to close the entire laceration, one or two sutures of medium sized catgut buried deeply enough to include the fascia will prevent prolapse. Lacerations of the posterior segment of the pelvic floor are divided into tears of the pelvic floor and tears of the perineum. To recognize injuries to the pelvic floor requires especial care; the patient must be placed on the back or side at the edge of a bed or table, the labia separated and the pelvic floor raised for inspection.

If the laceration of the posterior segment be considerable and the condition of the patient bad, operation may be delayed

24 to 36 hours. The most important stitches in closing lacerations of the pelvic floor are those placed at the highest points in the tears in the sulci. In repairing the perineum, the operator should begin near the anus and bring together the skin edges and underlying fascia with silkworm-gut stitches, taking a considerable portion of tissue, but without tension. The perineum should be brought together up to the point where the posterior vaginal wall begins. If the pelvic floor sutures are continued on the perineum, the posterior wall of the vagina will be brought downward and protrusion of the vaginal mucous membrane will result. If the stitches are drawn too tightly they will cut; if sufficient tissue be not included in the stitches, only superficial union may occur. In complete tears, the rectum may first be closed by continuous suture of No. 1 chromicized catgut, prepared to last ten days, the stitches passed into the connective tissue, turning the mucous membrane into the bowel. A careful approximation will turn but little mucous membrane into the intestine and secure good application for the stitches. The fascia and sphincter muscle of the bowel may then be accurately closed and then the pelvic floor and perineum as in an incomplete tear. Chromicized catgut No. 2, prepared to last ten days, has given good results in the sulci of the pelvic floor and where but one stitch was required in the fascia and muscle of the sphincter of the bowel. For closing the anterior segment of the pelvic floor and the rectum, No. 1 catgut of the same sort has been useful. In the skin perineum, silkworm gut has given satisfaction. In complete tears, the free use of salt solution on the mucous membrane of the bowel tends greatly to prevent infection. Where there is edema, the application of hot sterile compresses or irrigation with hot sterile salt solution may be useful. Vaginal douches should be avoided, because they may carry infective material from the perineum to the cervix. The after-treatment consists of surgical cleanliness so applied as least to disturb the tissues and parts which are healing. The use of the catheter after this operation should be as brief as possible and its employment should cease after two or three days. After complete tears the rectum must be kept quiet for 48 hours, and after that daily movements of softened fecal matter should occur. After the operation for complete tear, fistulæ may remain between the vagina and rectum for some time. Fluid may pass between these cavities. If care be exercised in aseptic precautions and saline flushing, these fistulæ will close spontaneously and their presence will delay convalescence but slightly. Where partial union occurs, as soon as the first stitches have been removed, a good result can often be obtained by curetting thoroughly the unhealed parts of the laceration and by inserting stitches a second time. In estimating the success of an immediate operation we must take into consideration whether the vaginal walls are completely or very nearly in apposition and without prolapse, whether there is good control of the sphincter of the bowel, and the patient free from pain, especially when using a closet or commode, or when moving about, and whether there is discharge from the sutured tissues.

DISCUSSION.

Dr. E. E. Montgomery said that the possibility of infection must influence the procedure, whether it be immediate, intermediate or of a later date. He would want to know something of the methods of the attending obstetrician before he would resort to immediate repair of cervix, vagina or perineum. In a number of cases of laceration of the pelvic floor, where the immediate repair was made, and in which aseptic precautions had not been employed by the attendant, sepsis developed and it was necessary to remove sutures to give the patient a chance for recovery. In a case seen in consultation, he found that there had been a bilateral laceration of the cervix into the lateral fornices to the peritoneum. A laceration of the perineum to the sphincter had been repaired. As a result the tissues were bathed with a lot of decomposing material and there was high fever. Instead of hysterectomy, he advised removal of the perineal sutures, the entire cavity irrigated and packed with gauze. A few hours later there was a temperature of 106; but there was subsequent recovery. In other cases the immediate repair of the perineum has been followed by much necrotic tissue between the sutures, no union ensuing and the necrotic tissue giving rise to danger from absorption of the putrescent material. Objection is sometimes made to immediate repair of the cervix from the fact that the parts are so relaxed that the sutures have to be tied firmly, and, owing to the rapid involution, become loosened, and union does not result. In the majority of primæ gravidæ laceration of the cervix occurs. In a series of examinations made at the Philadelphia Hospital, in the great majority of cases the laceration had healed spontaneously. The acid secretion of the vagina causes the more rapid disappearance of the catgut than is evident in other parts of the body. In some cases, catgut prepared for a short time has been absorbed too soon, and there is stretching of the parts and formation of cicatricial tissue. In operations on the vagina and perineum the operation should include every laceration in the genital canal, otherwise there will be danger to the patient from the accumulation of material in the vagina giving rise to septic processes.

Dr. John G. Clark quoted Dr. Dickinson as advocating waiting five days for the repair of all lacerations of the cervix, except in the three following classes: 1, those in which there is a profuse hemorrhage from the laceration; 2, those in which there had been bilateral incisions; 3, those in which the cervix is low in the vagina and may easily be reached at the time of the perineorrhaphy. There must first be taken into account the time when injuries to the perineum are sutured. Dr. Clark urged that careful operative technic is the keynote of the situation. For several years the consensus of opinion has been in favor of immediate repair. Considering the bad surroundings under which these operations are necessarily performed and the uniformly good results following, Dr. Clark believes that a general departure from this custom is not justifiable. If under unfavorable conditions these results follow, there may be expected even more perfect healing following the treatment described by Dr. Davis. If it were admitted that the perineum should be at once repaired, then the cervix should be either immediately repaired, or, if deferred, at a more remote day after the puerperium is completed. All have seen cases in which healing occurs most satisfactorily when left alone. If primary healing is not satisfactory the more remote trachelorrhaphy is so good, that to break into a woman's early convalescence and throw her house into turmoil six days after her labor, by operating at a time when the milk secretion is fairly established and the baby nursing well, is not justified by the surgical exigencies of the case.

In the discussion of the immediate repair before the American Gynecological Society, Clifton Edgar and Cragin of New York, Williams of Baltimore, Craig of Boston, and Wakefield of San Francisco all opposed the immediate repair of a lacerated cervix. Cragin admitted that it might be done by skilled hands successfully, but that he could not sanction this teaching to students. Dr. Clark had no doubt that these injuries, if repaired in a well-equipped maternity hospital, would do well, yet the vast number of labors occur in private houses, in the majority of which there are no facilities for repairing a lacerated cervix. It would be ideal to have all women confined in maternity hospitals, or if in private houses to have an expert in consultation, but the domestic environments of the parturient woman are usually such that this will never be the case, consequently these operations must be considered from the standpoint of the conditions under which they will usually be performed. If the immediate or five-day repair were generally to be adopted, not only would the morbidity, but also the mortality of puerperal cases overbalance the good which this procedure might do, if solely confined to the hands of the specialist.

Dr. Strieker Coles said that for the last ten years he has closed all lacerations of anterior and posterior vaginal walls and in the cervix, if the tear were large, immediately after labor. He has not had to delay in a single case for 24 hours, for he prepares for it before delivery. The stitches should be placed at the uppermost part of the tear, but should not be placed too far down, as the lumen of the cervix will be nar-

rowed and the flow of lochia retarded. His results with immediate closure of the perineum, pelvic floor and anterior vaginal wall have been most satisfactory, even when the tear was complete. He emphasized the importance of bringing muscle to muscle, and to do this with the buried suture it is often necessary to bring the retracted ends into direct apposition. He tries to obviate the swollen and edematous condition of the parts, which largely causes the objection to immediate closure by watching his cases and not allowing the tissue to become devitalized by prolonged pressure. The healthy epithelial cell is the best barrier to sepsis and he endeavors to protect and keep its continuity. He wonders whether sepsis will not be more frequent when raw surfaces are left exposed for five or ten days, and what will be the effects of an operation at this time on the mother's milk. When done immediately the operation takes a very few minutes, causes the patient no inconvenience and only slight pain, and gives almost as good a result with the cervix and equally as good with the perineum, pelvic floor and anterior vaginal wall.

DR. E. P. BERNARDY said that his results have been very good, without elevation of temperature. Everything should be properly prepared, even at the bedside of the patient. While 25 per cent. of lacerations of the cervix heal spontaneously, the other 75 per cent. are either operated on, or the patients live with lacerated cervices. Dr. Bernardy stitches lacerations of the perineum immediately after the birth of the child and he cited one case seen in consultation, in which there were used twenty-two stitches in the vagina and perineum, and in which on the ninth day the patient left her bed entirely well and without a sign in perineum or vagina that there had been a laceration. In cases in which the parts are mutilated and black and blue an attempt should be made to bring the tissues to normal condition by douching with warm saline solutions before stitching, when the results invariably will be good.

DR. GEORGE M. BOYD said that he thinks it would be bad teaching to tell the average family doctor, who must be an obstetrician, to sew up every cervix. The average maternity is not sufficiently careful to repair injuries after labor.

DR. O. HOPKINSON, JR., said that in his experience, tears had been bilateral and the anterior lip much larger, edematous and more easily reached than the posterior. He cited one case in which a man with little experience in the repair of the cervix, tried to pull the posterior lip down even with the anterior, with the resultant giving way of the tissues. Immediate repair of the cervix should be done by some one with experience. He believes it safer, except in the presence of hemorrhage, to leave it alone for five or more days.

DR. THEO. A. ERCK stated that he places stitches for laceration of the perineum at the termination of labor. All have seen and operated on cases in which the result of the primary repair was a failure, and he suggested the substitution of silkworm gut, so that the operator will see the result during the removal of the stitches.

DR. RICHARD C. NORRIS thought that the intermediate operation must be considered from two view-points: 1. Its practicability; 2. its results. It is the experience of most men that the immediate operation for laceration of the cervix, unless done for the special indication of hemorrhage, is not justifiable. When the intermediate repair is chosen and an examination is made on the sixth, seventh or eighth day of the puerperium, the cases of spontaneous healing of the cervix will be found to be pretty well advanced, and the experienced surgeon will not operate; if spontaneous healing has not occurred the experienced surgeon will operate at this time. Operation on the cervix, after the sixth or seventh day, has been quite as successful as in a later operation. If equally satisfactory union follows an intermediate operation, what advantage can accrue to the patient by delay? In many cases, while the wound in the cervix unites, the uterus undergoes chronic interstitial changes, and there has been evolved a train of symptoms which often persist, but which would not exist if the cervix had been repaired at an early date. If it can be demonstrated that better results will follow an immediate operation for repair of the pelvic floor and perineum than can be obtained by the intermediate operation, then the immediate operation should be done, and the advantage of the intermediate cervix repair must be abandoned. If it can be demonstrated that the operation on the perineum has no disadvantages by being delayed and that equally good results can be obtained, then the combined intermediate repair of both cervix and perineum will be the ideal treatment. If the obstetrician has not conducted the labor with the highest grade of asepsis and antisepsis he had better not operate immediately or after a few days. It should be determined by actual experiment whether it is any detriment to the patient to allow the perineum and pelvic floor to remain unrepaired for six or eight days. There would not be so many secondary operations if the average physician did not neglect at once to repair these cases, and yet patients so neglected seldom have serious infection. If the average practitioner gets bad results in the primary operation, he will get bad results in the intermediate. He had better do the best he can with the immediate repair of the perineum, and when the patient is convalescent send her to a gynecologist for reasonably early repair of the cervix. As time goes on the new generation of physicians will be prepared for clean surgical and obstetric work, and the intermediate operation on both the cervix and pelvic floor will gain in popularity with the profession. Among the more intelligent class of private patients, appreciation of the ultimate gain will offset the natural objections on the part of the patient and her family to an anesthetic and a formal operation following so closely the anxiety of the confinement.

DR. B. C. HIRST agrees with Dr. Norris that the question can not be decided by theorists, but only by men with large practical experience. His experience coincides with that of Dr. Norris. Until three and a half years ago he believed it a bad plan to attempt too much in the way of repair, but he happened to see Lusk's statement in regard to the repair of the cervix and one or two articles advocating primary repair, and determined to try it. As a result of that trial, for three and a half years, in an experience comprising more than 150 cervical operations alone in the University Maternity, beside a number in other hospitals and private practice, he is in a position to recommend the procedure. Fifty or sixty years ago the average practitioner was not able to use the forceps. An old graduate told him that when he left the university fifty years ago to settle in the country he took an obstetrical forceps with him, and an old practitioner, having a case of adherent placenta, sent for him to bring those "new-fangled instruments" and see what he could do with them. Dr. Hirst believes that in the near future the majority of physicians in general practice will do this work well or they will not do it at all. In the University Maternity he said that they demonstrated more than 50 cervical operations every season, done usually at the end of a week, to a class of about ten men each, so that each man acts as assistant in about five cervical operations. He believes that these students ought to be prepared to do this work as it should be done. Dr. Hirst said that he at first thought the immediate operation was the better one and he had tried it in 40 or 50 cases, but had found that there was too large a percentage of fever after the repair of the cervix immediately. After the intermediate operation this tendency was not observable. Dr. Hirst disagrees with Dr. Dickinson if the latter is quoted correctly as saying that if the perineum must be repaired then the cervix should be immediately repaired. There is no harm whatever in letting the perineum go to the end of a week.

DR. E. P. DAVIS said that he has not noticed the absorption of No. 10 catgut alluded to by Dr. Montgomery in puerperal cases. It seems to him that the relation of the lochial discharge is not the same as that in the vagina of a woman not parturient. By immediate repair he would understand repair within an hour after the expulsion of the child, not 12 or 24 hours. In a certain class of cases the results have been satisfactory. The cases are watched through the entire labor and the tissues are not allowed to become nodular, edematous nor bruised. After delivery the entire genital tract up to the internal os is inspected for lacerations. Lacerations of the cer-

vix more than one-quarter of an inch long and of the pelvic floor and perineum are closed. He has seen no fever following this procedure. He has seen a number of very satisfactory unions in the cervix and, of course, a very high percentage of unions in the pelvic floor and perineum. Those cases were in good hands, and the operation was practically immediate. The so-called intermediate, or five or seven-day operation, is on trial. Is obstetrics to be done as a makeshift, a disagreeable necessity by the practitioner, to eke out his living; or, is it to be a surgical specialty? Many cases will fall into all sorts of unskillful hands, and in such hands, the least interference the better; but, if obstetrics is to take the place of a surgical specialty, then the students will develop an individual aptitude for practice, and some will take up medical work; others will do surgical work, and those students will be competent to perform operations on the genital tract, whether it be done within an hour, in ten or twelve days or in two or three weeks, and the work will go to those men.

CLEVELAND ACADEMY OF MEDICINE.

Twentieth Regular Meeting, held Sept. 16, 1904.

The President, Dr. G. W. Crile, in the Chair.

The Surgical Treatment of Paralytic Deformities with Demonstration of Cases.

Dr. Walter G. Stern presented three cases of severe paralytic pes varus caused by paralysis of the tibialis anticus and posticus muscles. One was operated on by grafting the tendon of the extensor proprius hallucis into the tendon of the tibialis anticus just below the annular ligament, with the result that the flat-foot has disappeared. The patient constantly holds the foot straight or slightly inverted and can actively invert the foot, when, at the same time, he extends it. Through active massage, exercise and gymnastics, the patient can invert the operated foot almost as well as the sound one, and the tendon of the extensor hallucis has hypertrophied. The second case showed still more hypertrophy of the ingrafted extensor hallucis. In this case it could easily be mistaken for the tendon of the tibialis anticus. The third case had, in addition, a paralysis of the first two tendons of the extensor digitorum. This case was operated on according to the plan of Hoffa. The extensor digitorum was shortened, all the tendons being united in one, the extensor hallucis was inserted into the tendon of the tibialis anticus and the peroneus brevis was cut off from its insertion at the fifth metatarsal and brought around behind the tendo Achilles and firmly sewn into the periosteum of the scaphoid. This operation gave an ideal result, patient can actively invert and evert, pronate and supinate the foot, and has in addition a moderate amount of extension in the toes. Two cases of paralytic pes equino-varus were cured by lengthening the tendo Achilles, and inserting one-third of it into the tendons of both peronei muscles. The tibialis anticus was divided, one-half being sewn into the paralyzed extensor digitorum, the other half being lengthened. The entire extensor hallucis was brought over and sewn into the periosteum of the cuboid. Both operations were preceded by forcible correction by means of the Thomas wrench and tenotomy of the plantar fascia and tendons. The result in both cases is such that the feet are permanently in a valgus position and can actively be flexed, extended, inverted and everted. One case of Volkmann's ischemic paralysis of the wrist was straightened by lengthening the flexor tendons, and inserting the cut tendons of the palmaris longus and flexor ulnaris into the extensor communis digitorum by means of artificial tendons of silk. The hand was dressed in a hyper-extended position. The patient can now hold the hand straight and slightly flex and extend the fingers.

The object sought by these operations is not to add new muscle power, but to distribute the power left to the member so as to bring the parts into a condition of stable muscle equilibrium. Lange's teachings were closely followed, but not to the exclusion of the sound principles of the Nicoladoni Vulpius method. These cases show that flexor tendons can learn to act as extensors and vice versa, and that when the proper after-treatment is employed comparatively weak tendons may be made to hypertrophy when called on to do the work of a more powerful muscle. Silk was used in sewing the tendons and for the artificial tendons, and silkworm-gut for the skin. The member should always be held in an overcorrected position for at least eight weeks. This is best done by means of a plaster cast. Failures from tendon transplantation may be attributed to the following reasons: 1. Lack of after-treatment. This is a very prolific cause. Davies' report of 38 cases operated on in Boston lacks the important mention of after-treatment, and their failures may be due to this one factor alone. 2. Inflammation. Hemostasis and asepsis must be absolute. Silk should be boiled on three successive days, and catgut should be tabooed. Inflammatory reaction which would be harmless in a laparotomy will cause adhesion of the transplanted tendons and failure. Extensive mutilation should be avoided, as Senn has shown that repair begins from the tendon sheath. 3. Lack of sufficient muscular tension. All paralyzed muscles lose tone and elastic tension, and therefore all transplantations must be done under sufficient tension to allow the muscles to work. This tension is rendered latent and harmless by holding the limb in an overcorrected position for eight weeks. 4. The use of weak or paralyzed muscles. This can not always be foretold. Electrical reactions in children are extremely uncertain. Muscles may simply be overstretched and not paralyzed. Cutting into the muscles is not always a safe guide, as the color depends on the relative amounts of healthy muscle, fat and regenerated muscle fiber in that particular spot.

Some Common Errors in Obstetric Practice.

Dr. R. E. Skeel said that patients themselves are frequently responsible for poor work, because of unwillingness to pay for adequate attention and nursing. Proper antepartum examinations are still neglected in spite of text-book advice, with the result that eclampsia occurs unnecessarily. Malpresentations are not discovered until labor is well under way, and disaster, in the way of maternal or fetal death, often occurs. Neglect of scrupulous aseptic technic is fostered by the fact that Nature's own efforts frequently overcome infection before systemic absorption takes place, and it would be better if a definite minimum amount of septic material in the vagina were invariably followed by reaction. In that event every attendant would use the proper precautions to prevent its introduction. Most frequent failures in asepsis are due to too great faith in chemical antiseptics and the belief that infected cases can be handled with impunity if the hands are washed in bichlorid solution. The development of the aseptic conscience will be followed by better results, as it will lead to the use of rubber gloves, infrequent vaginal examinations, and in the future to resort to the sharp knife and clean incision more frequently, and the heavy, bungling instruments with the traumatism which they produce will be less often seen. Fetal death is often caused by premature operative interference in cases of difficult labor, due to close adaptation of the fetal head. Conditions, not hours, should count in the indication for operative termination of labor. Pelvic floor injuries are overlooked or badly repaired by efforts to minimize their importance and sew them up immediately after the close of labor. This is much better done if deferred for twelve or twenty-four hours, and perfect results can be obtained at this time. Exact diagnosis of any postpartum elevation of temperature is necessary in order to treat it intelligently. Great harm is done by failure to recognize that persistent temperature without apparent cause is usually due to infection. More harm is done by trying to treat all such infections when recognized by the intra-uterine douche. Diagnosis of the treatment may be applied. Peritonitis, postabortum or postpartum seems to be managed most successfully by simple incision and drainage. Pryor's incision and iodoform gauze pelvic drain work well in nearly all early cases, although a number will need secondary removal of the diseased organs. The laity still fails to recognize that a competent nurse is almost as important as a com-

petent physician, and the so-called experienced nurse whose chief assets are her unbounded confidence in her douche bag and her consuming desire to wash the baby is altogether too much in evidence. By proper education and insistence on the part of the physician this defect can be overcome in time, but, at the present, conditions among the masses of people are anything but satisfactory.

DISCUSSION.

DR. F. S. CLARK emphasized the importance of the preparation of the attendant and the patient before examinations were made; the methods are usually careless and the field is a more difficult one to keep clean than the surgeon's operative field. Clipping the vulvar hair was important, and care in inserting the examining fingers so as to avoid contact with the surrounding parts.

The cut end of the cord should be antiseptically dressed at once; usually this is not done for an hour or more, and cord infections are more frequent than is generally supposed.

Trichinosis.

DR. SIHLER reported a case of trichinosis in a girl aged 10. The swelling of the eyelids was marked, and he regards this as a very important symptom. The patient was flushed, delirious and had a high fever, but no albuminuria. Subsequently he saw several other cases in the neighborhood infected from the same source as the original one.

Intussusception.

DR. R. E. SKEEL reported a case of acute intussusception in a child of 11, who had for a week some abdominal pain, for which he had been given cathartics with satisfactory results as regards the bowel movements. On examination there was slight resistance on the right side of the abdomen, but no elevation of temperature, the pulse was normal and there had been no bloody stools. The next night he had more pain and vomited once or twice, and next morning a characteristic sausage-shaped tumor was found extending across the abdomen into the left iliac region. An operation was performed; the invagination had begun at the cecum immediately above the appendix, and extended to the sigmoid. Reduction was easy, as few adhesions were present. A gangrenous spot was found at the tip of the invagination, and this was closed with sutures; the sutures prevented a tendency to reinvagination, noted when the condition was at first reduced. The case recovered satisfactorily.

Adrenal in Collapse.

DR. YARIAN reported the successful use of adrenalin with saline solution in the collapse of an infant suffering from digestive troubles.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, held Oct. 20, 1904.

Dr. Andrew H. Smith in the Chair.

Primary Malignant Neoplasms of the Lung and Pleura.

DR. ISAAC ADLER delivered the Wesley M. Carpenter Lecture. He said that the treatment of malignant neoplasms of the lung and pleura is almost entirely neglected in the literature. Dr. Adler has seen ten cases, in all of which the diagnosis made during life was confirmed at the autopsy. Primary malignant disease of the lungs and pleura probably is much more frequent than is generally supposed. Organs which are so often affected by secondary deposits are rarely the seat of primary ones. It is difficult to determine whether tumors of the lung arise in the epithelium or in the endothelium. The endothelium has a very strong tendency to proliferate and it is difficult to distinguish a neoplastic growth from proliferation. In primary epithelioma of the pleura this structure becomes very much thickened, especially the costal pleura, which becomes hard and lacks its normal glossy surface. The diagnosis must be decided by the microscope.

The proportion of males to females is about 5 to 1 and the right side is more often involved than the left. It is less frequently found in children than in adults. Wolff of Munich in 20,160 autopsies found primary cancer of the lungs in 46 cases. Carcinoma was found in 211 cases, sarcoma in 22, endothelioma in 24; 10 cases were mixed and the remainder he was unable to classify. The majority of cases of carcinoma originated in the bronchi and had a tendency to ulceration. They formed large tumors in the mediastinal spaces where adhesions were readily formed involving the pericardium and other nearby structures. There was frequently a tendency to hemorrhage. It was exceedingly difficult to diagnose between carcinoma and sarcoma, the essential feature of the former being the character and behavior of the epithelial cells.

Sarcoma of the lung occurred in massive tumors while softening and degeneration with the formation of cavities rarely occurred. Extensive papillary growths of the pleura often occurred and it was quite common to find cancerous erosions of the blood vessels which caused metastasis. The retroperitoneal lymph nodes and the mesenteric and inguinal glands were frequently involved. Metastasis occurred 87 times in the liver; in 49 instances the kidneys were affected and frequently the pericardium also. The heart was sometimes affected by direct proliferation. In 27 cases metastasis occurred in the brain. Certain nerves, the diaphragm and peritoneum were also frequently involved.

Heredity, habits and occupation do not seem to be predisposing factors. If traumatism has any influence it is probably as a stimulant to neoplastic growth. Dr. Adler thinks that these growths and tuberculosis may exist at the same time. In 37 cases there was no expectoration and in 158 cases the character of the expectoration gave no aid in diagnosis. The sputum in many cases contained gangrenous masses. Death may be due to hemoptysis. Dyspnea was frequently noted. Pain was noted as an early symptom in 128 cases, and this was considered an indication of the extent of the pleural involvement. Pleuritic effusion was of common occurrence and an examination of the exudate may aid in diagnosis. In examining the chest flatness was noticed in some cases; in others, tympanitic sounds were elicited. At times intense dullness with a woody resistance in the upper part of the right or left lung associated with abolished voice and breathing sounds, not extending to the apex, presented symptoms which were pathognomonic of this affection. The one absolute sign is the finding of tumor elements in the sputum. There is a great difficulty in making a diagnosis between tumor and tuberculosis. Syphilis and aneurism must also be differentiated. The *x*-ray is of value in making a diagnosis.

CALIFORNIA ACADEMY OF MEDICINE.

Meeting held in San Francisco, Sept. 27, 1904.

The President, Dr. T. W. Huntington, in the Chair.

Value of the X-Ray in the Diagnosis of Certain Headaches.

DR. C. M. COOPER described the case of a woman with severe periodic headaches for which no cause could be discovered until the *x*-ray showed a marked osteosclerosis of the cranial bones with obliteration of the diploë and of the sutures.

DISCUSSION.

DR. H. C. MOFFITT described a similar case in which the headache had for years been regarded as a functional condition until the *x*-ray showed a thickening in the bones of the cranium. One year later double optic neuritis developed. In a second case an osteoma of the skull was demonstrated by the use of the *x*-ray.

DR. GEORGE BLUMER stated that he had performed an autopsy on a case very similar to those described by the preceding speakers and had found an enlarged pituitary body without any other signs of acromegaly except the thickened cranium.

Use of the Iodids.

DR. C. M. COOPER stated that he had seen several cases in which the continuous use of iodids in large quantities had given rise to a slight exophthalmos and a von Graefe phenomenon. In a case of gummatous meningitis, by using a com-

bination of the iodids, with thyroid extract, he had obtained a better result than by the use of iodids alone.

DISCUSSION.

DR. EVANS stated that he had administered iodin in this manner and not only obtained good therapeutic results, but had been able to demonstrate the iodin in the urine in considerable quantities and for a long time after ceasing the administration of the drug.

Malignant Papillary Growth of the Colon.

DR. L. W. ALLEN stated that the patient began to complain of burning sensations in the abdomen and attacks of vomiting about the middle of May, 1903. He became very constipated and passed blood in the stool. He rapidly lost in weight; 42 pounds in ten weeks. Physical examination about August 1 revealed a large mass in the right ileocecal region extending up under the ribs. He continued to lose weight during the next month, but seemed to recover the loss in the next six months, and on April 13, 1904, he came under Dr. Allen's care. A mass the size of a small orange, which was freely movable and not tender, could be felt in the right iliac fossa. Owing to the low percentage of hemoglobin, operation was postponed until June 13, and a tumor of the ascending colon was discovered. The transverse colon was divided near the hepatic flexure and the end of the distal portion turned in. The ileum was divided near its termination and a lateral implantation of the end of the ileum on the side of the transverse colon was made. Finally the ascending colon and cecum were removed. The patient recovered from the operation. Pathologically the growth proved to be a malignant papilloma.

Effects of Bile on the Ester-splitting Properties of Pancreatic Juice.

DR. HEWLETT made a preliminary report on the effect of bile on the action of the pancreatic lipase. It has long been known that bile assists in the digestion and absorption of fats, but the nature of this action has never been fully worked out. The addition of bile to pancreatic juice will increase the action of this secretion many times on certain esters (ethyl butyrate, ethyl acetate, amyl acetate, triacetin), as much as forty times being observed in certain instances. This action was due, in part at least, to the lecithin contained in the bile. The lecithin acts as a zymo exciter and not by converting a proferment into an active ferment.

DISCUSSION.

DR. OPHULS called attention to the somewhat similar action of lecithin in activating the hemolytic substance present in cobra venom as has been shown by Kyes.

A New Analgetic, Stovain.

DR. DUDLEY TAIT stated that many substitutes for cocain have been proposed, yet none has as yet replaced it. Stovain[1] is a drug which promises to come into general use. The experiments of the Paris surgeons would seem to indicate that stovain is as effective as cocain as an anesthetic, and is only one-third to one-half as toxic. It is possibly somewhat more fleeting in its effects. When dropped into the conjunctival sac it will induce anesthesia, but here it is inferior to cocain, being more painful and at the same time less analgetic. It causes hyperemia of the tissues instead of anemia. This may be disadvantageous when it is used as a local anesthetic, but is probably of advantage when it is used for spinal anesthesia. The use of stovain as a spinal anesthetic is not followed by such bad effects as are liable to follow the use of cocain. Possibly it may prove to be of use in high spinal anesthesia. It is possible to introduce a needle into the sixth intervertebral space without injuring the cord, provided one pays sufficient attention to the sense of resistance offered by the ligaments and the dura. The anesthesia resulting from an injection of cocain at this point is complete, but the method is attended with a certain amount of danger on account of the depressing effects of the cocain.

1. A description of stovain may be found in THE JOURNAL, pages 575 and 634.

Travel Notes.

CEYLON.

FROM AUSTRALIA TO CEYLON—ISLAND OF CEYLON, ITS CLIMATE, PEOPLE, DISEASES—COLOMBO GENERAL CIVIL HOSPITAL—CEYLON MEDICAL COLLEGE—CEYLON LEPER COLONY—LEPER BUDDHIST CELEBRATION—KANDY GENERAL CIVIC HOSPITAL.

(*Concluded from page 1497.*)

NICHOLAS SENN, M.D.
CHICAGO.

SOYSA BACTERIOLOGIC INSTITUTE, COLOMBO.

Since its opening this institution has undertaken work of diverse character, and is now supplying a long-felt want in the colony by its researches in bacteriologic analyses of tissues, secretions, blood, etc., so indispensable to scientific diagnosis of diseases. The acting director, Dr. S. C. Paul, F.R.C.S., is consulted by government medical officers and private practitioners for reports on specimens submitted to him on bacteriologic and allied subjects.

CITY OF COLOMBO.

The city of Colombo is an important port and the largest city in the island. It has a very mixed population of 128,000. More Europeans live here than anywhere else in Ceylon. The steamers anchor some distance from the wharf. It has excellent streets, the so-called red streets, a bright red from the color of the soil, electric lighting and electric tramways. The Grand Oriental Hotel, near the wharf, is the best hostelry in the island. Every room has an electric fan—a great comfort to the traveler throughout the entire year. The rooms of the hotel are never locked, as stealing and robbery are almost unknown. The crowd of chamber-men and servants are always ready to wait on the guests and understand to perfection the system of exacting a substantial tip. At the present writing the temperature in my room, in spite of the faithful fan, registers 91 degrees F. The air is thoroughly saturated with moisture, which is accountable for the oppressive sensation of heat that every newcomer experiences.

The Cinnamon Gardens is the city park and is a lovely place. The drives along the coast are beautiful and disclose at every turn the luxurious vegetation of this wonderful island. The native policemen are courteous and devoted to their duties. They are fully impressed with the responsibility and dignity of their office, and cross and recross their beats with a keen eye for any evildoers. The city has a museum, free library and many charitable institutions for the sick and poor.

THE GENERAL CIVIL HOSPITAL.

This hospital is made up of numerous one-story brick-and-mortar pavilions connected by roofed colonnade, cemented walks which impart to the whole complex of buildings a fine architectural appearance. The snow-white walls and pillars and the red tile roofs are in strong and beautiful contrast with the perennial green surrounding the buildings inside and outside of the large square court which they inclose. The income from pay patients is not large, but the government appropriations are liberal. All of the employes are salaried, including physicians, internes and nurses. Dr. Thomasz, one of the two attending surgeons, receives 4,000 rupees a year. He conducted me through the different wards and showed me many interesting surgical and medical cases. The nursing is in the care of thirteen Anglican sisters and a number of women nurses, graduates from the Lady Havelock Hospital. A corps of native men and women act as helpers. The wards are airy, well lighted and furnished plainly but comfortably.

Echinococcus, so common in Australia, is not seen here; on the other hand, elephantiasis is quite common. Dr. Thomasz has operated on a number of cases of scrotal elephantiasis with success. The natives are not very good subjects for prolonged major operations, as they are very liable to inordinate

shock. Chloroform is used as a general anesthetic, and in several thousand anesthesias only two deaths occurred. The operating room is old and not up to modern requirements. The equipments and appliances also leave much to be desired. Asepsis has not succeeded here as well as could be desired and the many failures to obtain primary wound healing have finally led to the abandonment of buried absorbable sutures of any kind. Silk is used almost exclusively and the sutures are removed from three to seven days after the operation. The same practice is followed in the Kandy General Hospital. In the outdoor department I watched an interne dress two recent wounds. He did not remove his coat, and a basin with some antiseptic solution was relied on in performing primary disinfection. Not much time or effort was expended in preparing the wounds for suturing, and I have little doubt that the sutures rather retarded than assisted Nature's efforts in repairing the wound.

Ovarian tumors are quite common, but myofibroma is rare among the native women. Women the subjects of ovarian cysts of enormous size frequently enter this hospital for operation. Little operating is done in the country villages and patients usually do not seek medical advice until they are much inconvenienced from the size of the tumor. Prostatectomy is performed by the suprapubic route. Stone in the bladder is not of frequent occurrence. Tuberculosis of the lungs is quite common, as during one year, 1901-1902, 956 cases were admitted to the different hospitals. Surgical tuberculosis is much less prevalent, as during the same year only 60 cases of tuberculosis of the glands of the neck were treated, 32 of lupus and only 5 cases of tuberculosis of the joints. I did not see a single case of spinal deformity among the thousands of people I saw in Ceylon and only one case of ankylosis of the hip and 2 cases of ankylosis of the knee joint, and very few cases of tuberculosis of glands of the neck or its remote result, scarring of the neck. Only 12 cases of snakebite are reported for one year, of whom 2 died.

SEPTIC THROMBOPHLEBITIS OF THE SPERMATIC VEINS.

Dr. Thomasz a few years ago described a form of septic thrombophlebitis occurring in young men the subject of varicocele; the immediate cause is usually an injury of some kind which induces the thrombosis. When this has taken place the pus microbes find in the obliterated lumen of the veins a favorable soil for their reproduction, which leads very rapidly to pyemia and death. The disease pursues a very acute course and is nearly always fatal unless an early radical operation is performed, which must also include the testicle on the affected side.

CEYLON MEDICAL COLLEGE.

The Ceylon Medical College was formally opened on June 1, 1870, with one principal and three lecturers. The first intent of the school was to be "simply an elementary school." The faculty was increased three years later and in 1888 it became a regular medical college with power to license in medicine and surgery. Lady students were admitted to the college for the first time on May 5, 1892. The one-story building of the college, with library, lecture rooms and laboratories, was erected at the expense of the late Susew de Soysa. The dissecting room is a separate building as well as the laboratory for physiologic and pathologic chemistry. The clinics are given in the General Civil Hospital, opposite the college building. The course of study embraces five years. The teaching force consists of 32 professors, lecturers, demonstrators and assistants. T. F. Garvin, M.B., C.M. Aberdeen, is lecturer on surgery, and H. G. Thomasz is clinical lecturer. Physics, biology and elementary zoology are included in the primary branches. All the specialties are included in the faculty. The present attendance of students is about 120. The students are given ample opportunity to serve in the hospital as dispensers and dressers, and the clinical material for instruction is very large, including practical obstetrics in the De Soysa Lying-in Hospital. The school has also a department for apothecaries. The standards for admission and graduation correspond with those of the medical schools of the United Kingdom. The fee for the whole course in advance (to be paid in one sum at the commencement of the first college year), is 800 rupees ($256). A number of prizes and medals have been established by friends of the institution. At the close of the session 1901-1902 the school graduated 26, the following year only 9 candidates. Part of the entrance and professional examinations are conducted in the Tamil and Singhalese languages, of which the student must have a fair knowledge.

LEPER ASYLUM AT HENDALA.

I visited this institution, which by the carriage drive is ten miles distant from Colombo. The road leads through a series of native villages, rice fields, marshes and strips of primeval forests and dense jungles. The colony is located on seventeen acres of land enclosed by a stone wall. The numerous one-story buildings of brick and mortar are connected by roofed cement walks. The entire settlement, exclusive of physicians, numbers 360, of whom there are only 60 women. The youngest patient is only 6 years old. One of the patients, a man 60 years of age, has been here for thirty years. He is afflicted with the anesthetic form of the disease, is totally blind and has lost all of his fingers and toes. The disease has cured itself, but has left the patient a helpless, shapeless mass of flesh. It appears that the anesthetic and tubercular forms of the disease occur about with the same frequency. The institution is well managed and the nurses and two resident physicians do all in their power to render the existence of these hopelessly

Leper Asylum at Hendala.

diseased victims as comfortable as possible. The patients appeared to be content with their fate and the humane restraint that is practised. The law of segregation came recently in force, but the authorities find it difficult to carry it out with the strictness for which it is intended.

LEPER BUDDHIST CELEBRATION.

The day I visited the asylum was the annual celebration to the memory of Buddha. It was a gala day, the walk leading from the entrance to the little Buddha temple was decorated with palm leaves. The procession was formed outside of the gate. There was no elephant to draw the shrine of Buddha perched on a rude cart, but a little humpbacked bullock answered the purpose very well, and he performed his part of the celebration with credit to his kind. A brass band and a band with native instruments headed the procession, then came the shrine followed by a number of bronze-colored yellow-robed priests, and lastly the Buddhist lepers in all stages of the disease. Explosives were thrown against the stone wall, where they exploded with a terrible report, emitting at the same time a blue-black smoke which enveloped the slowly moving procession. The bombardment, with the ear-splitting music of the native band, imparted to the whole affair a weird appearance. When the procession entered the temple silence was restored, and only the murmurings of the priests could be heard outside of its sacred walls.

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CITY OF KANDY.

This little city of 30,000 inhabitants, the former residence place of the kings of Ceylon, has degenerated into a dilapidated mountain village. It is located in a valley in the subalpine region, surrounded by verdant hills and nestled around a little artificial lake of the same name. It is accessible from Colombo by rail, the road passing the first fifty miles through rice fields, marshes, then ascending for thirteen miles in a zigzag line to the height of 1,600 feet above the level of the sea, and then through a valley nine miles in length, when the little city suddenly comes into view. The beauty of Kandy and its environments have been greatly exaggerated by sentimental writers. The town is noted for the Temple of the Tooth, an old, crumbling pile of stones which contains in its most interior and not accessible part a tooth of the famous prophet. I happened to be in the city on the day when the Buddhists turn out in masses to do honor and homage to their deity—Buddha.

THE ANNUAL BUDDHA CELEBRATION.

For three days the little city was packed with a seething mass of humanity. In many places standing room was scarce. The great event took place at 9 o'clock Saturday evening, August 27. The procession, headed by a band of native musicians and three elephants abreast with their riders, was made up of 24 other elephants, an army of chiefs gorgeously arrayed, and bareheaded yellow-gowned priests, dancers with faces disfigured by white stripes, screaming and yelling boys and the faithful followers of the god of whom at least one tooth had remained to testify that he once inhabited this earth; the tooth that was carried in the procession in a shrine carefully guarded. The most solemn celebrants were the 29 magnificent elephants, who marched with slow, thoughtful steps, their sly little eyes peeping through small holes in their masks of royal red, casting a glance now and then on the sea of humanity on either side of the road. The great mass of people who took an active part in this celebration and the enthusiasm aroused when the hiding place of the tooth of Buddha came into view showed only too clearly that this deity has not lost his influence and power among the natives of Ceylon.

BOTANICAL GARDEN.

The botanical garden four miles from Kandy is the most interesting spot in this part of the subalpine region of Ceylon. It comprises thirteen acres of land, included in a horseshoe bend of the Mahaweli ganga. Every known variety of palm can be found here, as well as specimens of nearly all trees and shrubs of the tropics. I saw here a clove tree (*Eugenia caryophylata*) at least forty feet high, an ebony tree (*Diospyros ebenum*) and a nux vomica tree of about the same dimensions. The towering palms, the dark walks cut through the otherwise impenetrable jungles, and the gorgeous flowers, of trees, shrubs and plants, make this spot a real paradise on earth, a great contrast to the dilapidated city of Kandy.

KANDY GENERAL CIVIC HOSPITAL.

This is a very pretty, comfortable, clean, well-managed general hospital, built on the same plan as the Colombo General Hospital. It is located outside of the depressing influences of a formerly famous, now crumbling city, in a little vale surrounded by green hills on all sides. The snow-white one-story pavilions and the connecting, roofed cement walks lined with square columns of the same color, around a central square ornamented with jack and betrees, palms and flower-beds, give it the very picture of isolation, comfort and peace. The 243 patients inside of its walls enjoyed the blessings of careful nursing and the benefits of excellent surgical and medical skill.

Dr. James William de Hoedt is the physician and surgeon in charge, ably assisted by a woman house surgeon, Miss Winifred Nell, L.R.C.P. and S. E. Dr. Nell is not only a very competent physician, but at the same time a skilled naturalist, as I had an opportunity to learn during the visit we made together to the botanical garden. The nursing staff is in charge of an Anglican sister, Sister Eustacia Mary, a well-trained nurse and charming lady. I found here a number of interesting emergency cases and the usual predominance of ankylostoma, malaria and enteric fever. There have occurred here in the small maternity ward recently five cases of puerperal tetanus, all recovered. This hospital has a remarkable record in the treatment of tetanus, 13 cases without a death. Buried sutures are not employed, silk is used exclusively and the sutures are always removed. Chloroform is the favorite anæsthetic and biniodid of mercury is largely relied on in hand and surface disinfection.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns without allusion to inquirer.]

Jaundice.

Porter, in the *Medical Record*, gives the following suggestions for the treatment of this condition:

DIETETIC.

The author recommends that the different classes of foodstuffs be given in quantities that will not overtax the digestive functions nor exceed the oxygenating capacity of the system. In some patients the exclusive use of skimmed milk or buttermilk is most valuable. This is to be followed as soon as possible by the use of unskimmed milk, beef tea, plain meat broths, and raw eggs may be added to the diet as soon as the patient can tolerate them. Later, as soon as the system will digest them, soft cooked eggs and beefsteak may be allowed. Last of all, bread is added to the diet, in the form of dry toast or plain wheat bread which is from twenty-four to forty-eight hours old. Fruit and many other vegetable foods it is advised to void in all forms of intestinal indigestion, as these articles are prone to cause acidity and fermentation.

ATTENTION TO THE BOWELS.

It is indispensable in the successful treatment of jaundice that from one to three free movements of the bowels should be secured daily. The cathartics and antiseptics work best when combined with the bile and pancreatic extract and should be administered before each meal. For direct action on the liver the author recommends calomel in varying doses. Calomel may be given alone or in combination with arsenic, bichlorid of mercury and ipecac. Hygienic conditions must be given proper attention. These patients should have access to plenty of fresh air and light; a sojourn in the country is often of very great benefit.

In the treatment of jaundice the continuous use of sodium phosphate has found favor with many clinicians. This drug may be administered in doses of from one dram to one-half ounce three times a day, best given before meals. It should be given over a period of considerable time. Even after the jaundice has disappeared it is advisable to continue its use in small doses.

Vomiting.

Lemoine, in *Nord. Medical*, for Sept. 15, 1904, says that he has found the following mixture valuable in the vomiting of pregnancy, and also in various cases of gastritis:

B. Mentholi	gr. iss	30
Tincturæ opii		
Tincturæ belladonnæ		
Tincturæ hyoscyami, aa	m. xv	1
Alcoholis	ʒ2/3	20

M. Sig.: Five drops in a little water every hour.

Striæ Atrophicæ of Pregnancy.

The *Journal des Practiciens* recommends the following ointment, which may be of use in preventing the above condition:

℞. Tincturæ nucis vomicæ
Tincturæ calisayæ, ää.....m. lxxv 6
Lanolini
Petrolati, ää.....ʒ2/3 20

M. Sig.: To be applied by massage for ten minutes every evening.

Typhoid Fever.

Hackett, in the *Medical Record*, describes his treatment of typhoid fever and calls it a specific treatment. It consists of the administration of mercury in the form of blue mass and calomel. The author believes that mercury is absorbed, taken up by the circulation and distributed throughout the body; by this means the mercury comes in contact with the typhoid bacilli and destroys them.

OUTLINE OF TREATMENT.

Blue mass in doses of from one to two grains is given every three hours from the time the patient comes under observation until the constitutional symptoms of mercurialism are noticed, such as soreness in the gums. An initial dose of five or ten grains of calomel is given, to be followed in a couple of hours by a seidlitz powder or two drams of Rochelle salts, unless hemorrhage or grave diarrhea is present. If constipation persists, five grains of calomel may be given once every day. Whether the bowels are constipated or loose, the rule is to give an alkaline cathartic during the fever; for example, a seidlitz powder or a teaspoonful of Rochelle salts. For restlessness and lack of sleep the author recommends an opiate which likewise quiets peristaltic action. If necessary, an enema of glycerin and water may be used to bring about a stool. For hemorrhage, morphin should be given hypodermically.

DIET.

Water and milk, equal parts to make a tumblerful, is given ice cold every two hours. If the stomach rebels after a fair trial, give some light farinaceous gruel or peptonized milk. Water is given freely. Watermelon has proved harmless and is a great source of comfort to the patient. The author has found that the mercury obviates to a degree the necessity for cold baths to reduce temperature.

As a result of this treatment he gives the following conclusions:

"1. In all cases of typhoid fever mercury is well borne by the system; it requires more mercury to get the constitutional symptoms of tenderness of the gums when typhoid fever is present than under any other circumstances.

"2. As the system becomes impregnated with mercury the bacilli gradually disappear, so that when the system is impregnated with mercury to the extent of a slight soreness of the gums the bacilli are no longer active. This is signified by a gradual reduction of the temperature to normal and a rapid convalescence.

"3. With the use of mercury the patient's blood is in a more healthy state; mercury maintains the red corpuscles of the blood, and accordingly the system does not fall into that state of grave anemia so common to the disease under other or no treatment.

"4. The patient may begin taking solid food as soon as the temperature is normal without danger of relapse. This I attribute to the healthy condition of the blood due to the action of the mercury in the system.

"5. A few days after the beginning of the administration of mercury in the treatment of typhoid fever the tongue becomes gradually moist. The breath gradually becomes less fetid, indicating a more healthy condition of the stomach, and there is a desire on the part of the patient to take the nourishment described. The stools also gradually lose their fetid odor. I have not had a dry tongue continue beyond three or four days after treatment was instituted since I began the use of mercury in this disease.

"6. The temperature of the patient treated with mercury in typhoid fever does not become subnormal after fever drops. The reason I ascribe for this is twofold: (a) We get control of the disease before the patient falls into a very low physical condition, and (b) the mercury increases the red corpuscles of the blood, tending to maintain the physical standard.

"7. It is unnecessary, unpardonable and unscientific to salivate a patient when using mercury in the treatment of typhoid fever, but I have yet to observe any ill effect of the slightest nature from the use of mercury in the system to the extent only of the soreness of the gums."

Diet in Typhoid Fever.

Henry, in the *New York Journal of Medicine*, says of the diet in typhoid fever that he gives nothing but water for from one to two or even more weeks, depending on the condition of the patient. Large quantities of water are given internally. After about a week, with everything going well, the patient is allowed every three hours a little orange or grape juice expressed fresh from the fruit. After all symptoms of bowel trouble have disappeared, the morning temperature normal and the tongue clean or clearing, food in very small quantities is allowed. The author states that he is not particular as to the kind of food allowed, but says: "I do not allow milk, soups, broths, or fresh foods or their extracts of any kind. As preferred by the patient, the most of the cereals or breakfast foods may be given, as well as the breadstuffs and about all kinds of fresh fruits. I allow the patient to eat but once in six hours, and for a number of days but one kind of the articles selected at a meal. Beginning with but a very small quantity at first, the amount can be gradually increased from day to day. Whatever is taken should be most thoroughly masticated; the dryer foods, such as toast or bread, should be chewed until they become quite fluid in the mouth, and the softer breads worked over in the mouth for some time, to insure thorough insalivation. I usually advise giving the fruit juice for some time after solid foods have been resumed."

The following formula is recommended for use in excessive tympany in typhoid fever:

℞. Olei terebinthinæ .....ʒi 4
Olei olivæ .....ʒiv 120
Emulsi asafoetidæ q. s. ad.....ʒxvi 480

M. Sig.: Shake well; use as a rectal injection.

Medicolegal.

Weight to Be Given Expert Opinions.—The Supreme Court of North Carolina says, in re Peterson's Will, that where the expert states precise facts in science as ascertained or settled, or states the necessary and invariable conclusion which results from the facts stated, his opinion is entitled to great weight. Where he gives only the probable inference from the facts stated, his opinion is of less importance, because it states only the probability. Several eminent judges and authors express the opinion that the rule, even as limited, is not sound, and should be rejected. Certainly, in view of the wide divergence and often irreconcilable opinions expressed by medical experts in respect to mental capacity on personal knowledge of conditions and hypothetical questions, the principle should not be extended beyond the limits herein prescribed. This case presented a striking illustration of the danger of undertaking to prescribe any rule for weighing the testimony otherwise than by the opportunities for knowing the facts on which their opinions are based. Of the four intelligent physicians examined, two expressed positive opinions that the testator had sufficient mental capacity to make the will, and two with equal confidence expressed opinions exactly to the contrary. It would seem that the safer rule would be to permit the entire evidence to go to the jury, to be weighed and considered by them in the light of all the other evidence on the question.

Is It Heresy for an Eddyite to Have Superfluous Hair Removed?—The Supreme Court of Michigan says of the case of Meyer vs. Knott that it was novel (not to say unique). The defendant was a teacher of Eddyism, and was in February, 1901, first reader of the First Church of Christ, Scientist, of the city of Detroit. The declaration alleged that on Feb. 14, 1901, the defendant falsely represented to said plaintiff that she (the defendant) was then a conscientious believer in and

practicer of the principles of "Christian Science," and "mentally and morally qualified and competent to give class instruction in Christian Science mind healing"; that the plaintiff agreed to pay and did pay the defendant $100 for instruction, which was given; that by reason of the defendant not being a sincere and faithful believer in and practicer of Christian Science, the plaintiff received no benefit from the instruction given him, wherefore he sought to recover the money paid and compensation for the time spent in the attempt to learn to "cure disease through the power of Christian Science mind healing." On the trial it appeared that the defendant had, two or three years prior to the contract with the plaintiff, had superfluous hair removed from her face by a physician by electrical treatment, and, as the plaintiff was able to call medical experts who testified that the superfluous hair was known to pathology by the name of "hypertrichosis," and was a disease, and as Eddyism is opposed to material treatment for disease, the Supreme Court says that it follows that one who has superfluous hair removed is not a true believer in, and adherent and practicer of, the principles of Eddyism. But the court goes on to say that, apart from the consideration that this departure from the true faith, if it be such, occurred two years before the contract with the plaintiff, thus leaving ample time for the defendant to mature her belief, the court deems it sufficient answer to the plaintiff's contention that, if it be conceded that superfluous hair is a disease, it is also regarded by many as a facial blemish. Some conceal it as well as they may by the use of face powder; some have it removed. The defendant, because her little son teased her about the appearance of this superfluous hair, caused hers to be removed. This was not done as a treatment for disease, but as a means of making herself more presentable. The court thinks this did not tend to show that the defendant was guilty of fraud in holding herself out as a teacher of Eddyism. The court takes pains to add that it is to be understood that both the plaintiff and the defendant proceeded on the theory that Eddyism, as taught by Mrs. Eddy's book, "Science and Health," is true, and that it had therefore determined the case on that assumption. (Judgment for defendant was affirmed.)

Wisconsin Doctrine as to Privileged Communications.—The Supreme Court of Wisconsin says, in re Hunt's Will, that its decisions on the statute (section 4075, Revised Statutes of 1898) giving privilege of secrecy to all information acquired by physician from patient in attending latter professionally, necessary to enable prescription for such patient, have eliminated from consideration very many of the refinements and distinctions with which some other courts have limited, if not emasculated, similar statutes. Thus the privilege under the Wisconsin statute is not confined to communications made by the patient, but extends to all information, however derived by the physician in the course of professional attendance and for the purpose specified. Neither are the words "necessary" or "prescribe" to receive any technical or unduly restricted meaning. Further, this court has held that the privilege is created for the protection of the patient, and is personal to him; and has in the plainest terms repudiated the doctrine supported by some authority elsewhere that others can in any degree waive the privilege. In Boyle vs. Northwestern Relief Association, 95 Wis. 312, this construction was announced, although its application was merely to deny right of waiver to physician. In Bruendl's Will, 102 Wis. 45, right of waiver was contended for in behalf of the heirs of the decedent, who offered the physician's testimony, and the whole subject was argued and considered fully, whereon it was said: "The legislature has decided wisely that public policy requires such measure of restriction on the freedom of the physician to testify or of others to demand testimony." While the decision in that case turned on other considerations, the above remark was made with deliberation, and in response to full discussion. The court adheres to that view, and holds that no one, save the patient himself, can effectively consent to withdrawal of this mantle of secrecy which the statute has cast about the information which the physician needfully acquires in and for professional treatment. Nor does the court agree with the contention that the statute has no application to a contest over the probate of a will. It says, among other things, that, as to physicians, its attitude, as already pointed out, is adverse to any power to waive the secrecy of professional information, and is also adverse to the grounds asserted by other courts, notably Iowa (Winters vs. Winters, 102 Iowa, 53), viz., that the "statutes are for the protection of the patient while living and of his estate when dead." Whether this last idea may be correct as to communications to attorneys with reference to property transactions, it certainly is not true with reference to the sheltering of information acquired by attending physicians. The purpose of that statute is personal. It is to protect the patient himself from disgrace or chagrin. Its effect on property rights or estate is only incidental. Such reasons do not cease on the death of the patient. His memory and good name are still subject to injury by publication of information necessary to proper treatment by his physician, and apprehension of such enforced publication after his death may well result in reluctance or unwillingness to make those disclosures necessary for preservation of life or health which it is the policy of the statute to encourage by assurance of their secrecy. The authorities supporting admissibility of attorneys' testimony as to the transaction of preparing and executing a will, which do not rest on a right of waiver of privilege in the legal representatives, do rest on grounds wholly inapplicable to the physician's testimony. The real ground, albeit not very clearly, declared in some of them is that the very transaction itself evinced an intention and desire on the part of the testator that the attorney should disclose what transpired, and therefore he himself had waived the statutory and common law seal of secrecy. Obviously no such purpose can be ascribed to the disclosures made to a physician for purpose of treatment by him because at or about the same time the patient prepares and executes a will. There is no rational connection between the two things; no probability that the patient expects or wishes his physician to publish to the world acts perhaps indicating paretic or other conditions, which might blacken the patient's good name and memory, or threaten the peace of mind of his descendants. Wherefore, after considering all the arguments urged or suggested in authorities cited, the court says that it is constrained to adhere to the views heretofore maintained by it that section 4075 is to be enforced according to its words, with no exceptions, save in the presence of a clear waiver of the privilege of secrecy by the patient himself; and that, after his ability to make such waiver is terminated by death, the physician's lips are forever sealed under all circumstances.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.
November 5.

1 *The History of Pediatrics and Its Relation to Other Sciences and Arts. A. Jacobi.
2 Dangers in the Use of the Glass Catheter During Parturition. Guy L. Hunner.
3 Tabe's Ill-health. George M. Gould.
4 *A Typical Case of "Chronic Dyspepsia" (Surgical Ulcer of the Stomach and Duodenum; Operation; Recovery. Charles A. L. Reed.
5 Acute Pancreatitis with Disseminated Fat Necrosis; a Report of Two Cases. R. W. Sappington.
6 *Congenital Partial Luxation of the Knee; Genu Recurvatum. Sydney M. Cone.
7. *Roentgen Ray in the Treatment of Sarcoma. Joseph F. Smith.

1. See abstract in THE JOURNAL of October 8, page 1078.

4. **Chronic Dyspepsia.**—The conditions revealed in the case reported by Reed were such as are found, with but slight variation, in all patients who insist on medicinal and dietetic treatment and realize little, or, at best, only temporary benefit from it. They are generally variously treated for "chronic dyspepsia," "gastralgia," "painful digestion," gallstones," "di-

lated stomach," "cardialgia," etc. Many of them, if left alone develop into cancer. The only rational treatment is rest and drainage. The only way absolute rest can be given to an ulcerated pylorus is to close it, while the only way drainage can be affected is to divert the food current. In the case cited, Reed performed a gastroenterostomy and a supplementary duodeno-duodenostomy three inches below the union to the stomach; the bile current was cut off from the stomach by plicating the proximal segment of the duodenum between the two artificial openings; complete occlusion of the pylorus was also affected by plication. The patient made an uneventful recovery.

6. **Genu Recurvatum.**—Cone reviews the pathology of this condition and reports one case for the purpose of adding more proof to the idea that the pathology is that of a displaced tibia due to a bending forward of the epiphysis on the diaphysis of the femur. Also, to indicate that if taken early and properly modeled and firmly fixed, the chances for a cure are much greater and much time is saved.

7. See abstract in THE JOURNAL of September 24, page 906.

Medical Record, New York.

November 5.

8 *Cancer of the Larynx. Felix Semon.
9 *Thyroidectomy for Exophthalmic Goiter. Based on Forty Operative Cases. Charles H. Mayo.
10 Two Cases of Chronic Nephritis Treated Surgically. James A. Nydegger.
11 Paralysis of the Left Recurrent Laryngeal Nerve in a Case of Mitral Stenosis. John G. Sheldon.
12 Two Cases of Locomotor Ataxia in Man and Wife. E. Stoehlia.

8. **Cancer of the Larynx.**—Semon urges the importance of early diagnosis of laryngeal cancer. The attention of the general practitioner should be drawn to the fact that there are no more promising cases for radical operation than those in which the disease is at first manifested by obstinate horseness, occurring, without any apparent cause, in middle-aged and elderly persons. The clinical diagnosis ought, whenever possible, to be confirmed by microscopic examination before a radical operation of any kind is undertaken. This, however, should only be done if the patient previously consents to immediate radical operation being undertaken in the event of the microscope confirming the diagnosis. The microscope is by no means infallible in these cases, and should its evidence be negative or inconclusive, microscopic examination should either be repeated, if necessary, several times, or, if the clinical symptoms do not warrant postponement, exploratory thyrotomy should be undertaken. The intralaryngeal method is unsuitable for the radical removal of malignant new growths of the larynx. Sub-hyoid pharyngotomy, apart from being applicable in a very small number of cases only, is still *sub judice* with regard to its advisability in such cases. Thyrotomy, if undertaken in suitable cases and at a sufficiently early period, and if performed on the lines which experience has shown to be successful, is a perfectly ideal operation in intrinsic cancer of the larynx. Hemi-laryngectomy comes into question only when, after opening the larynx it is found that mere thyrotomy will not suffice. When performed it may be accompanied by removal of the tributary lymphatics even if, apparently, not diseased. Semon advocates that total laryngectomy should be reserved for extrinsic, and for those cases of intrinsic cancer in which both sides of the organ are affected and in which the disease has proceeded too far to be eradicated by milder measures. When performed it should be accompanied by the removal of the laryngeal lymphatics on both sides of the neck.

9. **Thyroidectomy for Exophthalmic Goiter.**—Mayo prefers thyroidectomy to cervical sympathectomy in treating exophthalmic goiter surgically. He says if it were possible to eliminate more of the hopeless and yet operate on medium and severe types of the disease, the results of thyroidectomy would justify the operation and compare favorably with those obtained by other methods. His own cases show marked improvement of all who survived the operation. Of these, 50 per cent. made a very early recovery, especially of the severe symptoms—tachycardia, nervousness and tremor; 25 per cent. did so after several months, and 25 per cent. were improved, yet suffer from irregular recurrence of some of the major symptoms. He says if the condition of the patient is fair, operate, but if the pulse is from 130 to 160, or if it suddenly fluctuates in tension and rapidity, if there is anemia, with swelling of the feet, the patients are placed on the belladonna treatment for several days. The more severe types are also given *x*-ray exposures in addition, which is continued for from 2 to 6 weeks.

Medical News, New York.

November 6.

13 Subdivisions of the Concrete Concept Area of the Human Cerebrum. Charles K. Mills.
14 *Report of a Case of Splenomedullary Leukemia Treated for Nine Months by the X-ray. Wm. P. Cheney.
15 A Complete Case of Syringomyelia. M. G. Schlapp and James J. Walsh.
16 *The Conveyance of Yellow Fever. Henry R. Carter.
17 *Endotracheal Medication. J. J. Richardson.

14. **Splenomedullary Leukemia.**—When Cheney began the use of the *x*-ray in the treatment of this case the red blood corpuscles numbered 2,508,000; the white cells, 126,000; hemoglobin, 47 per cent. Throughout the course of the treatment the static machine and the street current were used and a "soft" or low vacuum Queen's tube. The duration of the treatment was usually from twelve to fifteen minutes. The tube distance was 10 inches, except in a few instances, when it was only 8 inches. The site of exposure usually was the splenic tumor, either directly in front or on the left side. Whenever there was any skin reaction the *x*-ray applications were made over the long bones—thighs and legs in particular, the sternum less frequently. At first daily exposures were made but because of intolerance of the skin Cheney adopted the plan of giving them every other day. During the nine months the patient was under treatment he received in all 144 applications. The effect on the patient's general condition was good. He improved in health, gained in weight, felt none of his old symptoms of weakness, dyspnea and abdominal distress. From a symptomatic standpoint he is well. However, the size and contour of the splenic tumor has not changed materially. The white cells fell as low as 45,000, but most of the time fluctuated between 70,000 and 90,00, the fluctuations apparently being dependent on the regularity or irregularity of treatment. The red cells gradually increased until they numbered 4,000,000, and they have never fallen below that point. The hemoglobin likewise has markedly improved, remaining stationary at 75 per cent. No bad effects were observed, except the dermatitis.

16. **Conveyance of Yellow Fever.**—Carter lays down the proposition that yellow fever is conveyed from the sick to the well by a mosquito host, the stegomyia fasciata, contaminated by feeding on the sick man; and, in nature, it is only thus conveyed. That this is the only method of conveyance, the argument is: 1. The analogy of other diseases conveyed by living hosts. 2. That the facts observed of the natural propagation of yellow fever agree with this theory. 3. That measures based on this theory have given the very results which they should have given if the theory were true. 4. No other natural method of conveyance is proven.

17. **Endotracheal Medication.**—Richardson believes that in intratracheal injections we have a valuable method of treating many of the inflammatory and infective diseases of the lower respiratory tract. The method is simple, safe and practical. The success in making the injections depends in no small measure on the selection of the syringe. The one which he has found most satisfactory is Shradel's. It consists of a glass barrel enclosed in metal and having a spiral spring attached to the piston. When the syringe is filled with the liquid for injection, it is relieved of its contents by gentle pressure with the index finger on a small spring that allows the liquid to flow out slowly or quickly, according to the will of the operator. The canula is about 8 inches in length and is of the proper curvature for its introduction and passage through the larynx. The selection of the medicaments is also of paramount importance. He has made most use of the volatile essential oils,

eucalyptus and thyme, combined with menthol, camphor, creosote, iodoform, or orthoform, with sterilized oil as a vehicle. The injections should be given daily, one or two drams of the liquid being injected at a time. The diseases treated have been bronchitis, bronchial asthma, tracheitis, bronchiectasis and pulmonary tuberculosis. Its greatest field of usefulness is in the treatment of bronchitis. The mixture which has proved the most beneficial in this class of cases is 5 per cent. campho-menthol with eucalyptus and thyme and sterilized olive oil, or a highly refined bland petroleum. No other treatment gives such prompt relief in the so-called "winter cough," chronic bronchitis of alcoholics, and the acute attacks which so often follow dissipation. As to tuberculosis, intrapulmonic injections have not proved to be all that was hoped for in the beginning. In most cases nothing more than temporary relief was afforded. The injections have no specific effects. Richardson believes, however, that they are a means of alleviating the local and general symptoms of the disease in many cases, better than by the internal administration of drugs.

Boston Medical and Surgical Journal.

November 3.

18 *Treatment of Lateral Curvature. Edward H. Bradford.
19 Fractures of the Radius in Starting Automobiles. R. B. Lund.
20 Three Cases of the Association Neurosis, with Remarks on Its Genesis. John E. Donley.

18. Treatment of Lateral Spinal Curvature.—The object of Bradford's paper is to present simple principles and methods of treatment for lateral curvature without structural changes, which can be adopted without demanding elaborate preparation or outlay. The methods vary in the rigor of application according to the severity and urgency of the case. The simplest method for the application of a constant force is one applied with precision and in such a manner that it will stretch the curved and distorted ribs and not the other portions of the spine. When, however, any alteration in the shape of the bones has taken place, the use of a stronger correcting force is necessary. For this purpose, nothing is as efficient as the fixed plaster jacket applied with the patient in a corrected position, or in a position as nearly corrected as is possible for the patient to endure. It is necessary that judgment should be used in the use of corrective force, and a certain amount of skill is required in order that jackets put on will be borne by the patients. It is undesirable that the first jacket should be applied with a distressing amount of force. Windows can be cut in the plaster, allowing respiration in the portions of the spine which do not need pressure, but in any event the application of a plaster jacket, if any corrective force is used, should be employed only when it is possible to watch the patient for twenty-four hours after the application. In most jackets, it is necessary that the bandage should be applied above the shoulders. It is rarely necessary to include the head, though in the most severe upper curves this would undoubtedly be desirable. Repeated applications of the jacket are necessary if much correction is expected. The greater the amount of structural change and the older the patient, the less the amount of practical correction which can be expected. Fixed plaster jackets should not constitute a method of treatment any longer than is absolutely necessary. They should be followed as soon as possible by removable corsets and by the use of gymnastics. Removable jackets can be made either of plaster, leather, celluloid or of cloth, reinforced by properly applied steel bands. These removable corsets should be regarded as applicable when the danger of increasing growth has passed, or when the greatest amount of correction has been obtained. That form of removable plaster jacket which is most within the reach of the general practitioner can readily be made if a plaster jacket is removed from the patient and a cast is poured into the jacket, thus making a mold; around this a plaster jacket may be applied, reinforced by bandages, which are rolled in a mixture of dextrin and plaster of paris. A jacket made in this way requires a longer time to harden than the ordinary bandage, but it is somewhat more elastic and durable. If split and arranged with lacing it will serve as an adequate jacket to a faulty position.

New York Medical Journal.

October 29.

21 Intracapsular Fracture at the Hip Joint with Complete Union of the Fragments. Thomas H. Manley.
22 Accessory Thyroid on the Posterior Third of the Tongue. Oliver C. Smith.
23 The Disturbances of Menstruation and Their Significance. E. E. Montgomery.
24 Vulvo-vaginitis in Little Girls. A Clinical Study of 190 Cases. (Concluded.) Sara Welt-Kahels.
25 *Inflammatory Diseases of the Joints and Their Treatment by Massage. Gustaf Norstrom.
26 Notes on Some Unusual Forms of Infectious Diseases of the Central Nervous System. James J. Putnam and George A. Waterman.

November 5.

27 Woman's Duty Toward the Health of the Nation. S. A. Knopf.
28 The Outlook in This Country from the Medical Point of View. Andrew F. Currier.
29 *A Clinical and Statistical Study of Convergent Strabismus. Wendell Reber.
30 Clearing Ship for Action. J. A. Guthrie.
31 *Chronic Dysentery; Two Cases Treated by Inguinal Colostomy and Irrigation. G. Childs MacDonald.
32 Primary Nasal Diphtheria; a Plea for Its Early Recognition and a Report of Three Cases. Anna S. Wilmer.

25. Massage in Diseases of the Joints.—Norstrom reviews the progress made by massage as a therapeutic measure in the treatment of various forms of arthritis. He says that where formerly the surgeon tried to prevent bed sheets from coming in contact with the joint on account of the fear or pain or still more serious consequences, we now perform effleurage, instituting systematic extension and flexion. The dictum of absolute rest has given way to that of allowing the patient to walk. Acute processes, instead of contraindicating massage, are now taken to indicate its use. Immobilization is neither necessary nor useful. In acute arthritis massage yields rapid and positive results. Even after the first treatment the pain and tumefaction often are diminished and a permanent cure is arrived at in a very few days. Massage will also cure a certain number of cases of chronic arthritis. In tuberculous affections of the joints, however, it may be a factor in contributing to serious general disturbances. In ordinary hydrarthrosis, Norstrom has always succeeded in causing a disappearance of the liquid and nearly always in preventing its reappearance, probably by modifying the secreting surface. The application of massage in the course of a rheumatic affection is often interrupted by the occurrence of relapses of varying intensity. It is useless to interrupt the treatment unless the relapses are real acute or subacute attacks, when massage ought to be stopped and salicylate of sodium administered for some days, before the massage is taken up again. It is desirable, in order to secure a permanent result, to supplement massage—simultaneously or when the massage treatment is over—which is better—by general treatment in the form of thermal baths. It should never be forgotten that rheumatism is a general disease and that the effects of massage are purely local. In gout he uses massage only when the attack has subsided and when the arthritis, or tenosynovitis, or bursitis with effusion, remains and shows very little tendency to become absorbed. Massage is useless in arthritis deformans, except in so far that it diminishes the muscular atrophy. Sometimes, too, massage may be applied with profit in the accompanying effusion of the joints, probably of rheumatic nature. The manipulations employed in chronic arthritis are generally effleurage and friction. Tapotement is only used when the arthritis assumes a torpid character and when it is necessary to provoke reaction and revive the vitality of the tissues. No hope of success from the use of massage in gonorrheal arthritis is entertained so long as a discharge persists. After the cessation of the urethral discharge, the patient should be advised to have recourse to massage. In hyperplastic granular synovitis massage should be avoided because its use favors the absorption of a product containing a specific element.

29. Convergent Strabismus.—Reber's study has led him to draw the following conclusions: 1. Esotropia is most likely to manifest itself before the end of the third year. 2. It can not yet be said whether any of the various reasons assigned by parents for the appearance of strabismus have aught what-

ever to do with it. Whooping cough may be related to it. 3. Heredity certainly plays a part in bestowing on some children a congenitally deficient visual apparatus. 4. The degree of deviation will average about 30 in a large number of cases. It is in no special way bound up with the degree of refractive error. 5. The amblyopia of esotropia is presumably an amblyopia ex anopia, the present day evidence being against Schweigger's theory of a congenital amblyopia. 6. The degree of amblyopia increases with the length of time elapsing between the appearance and the time of treatment; especially is this true after the seventh year. 7. Improvement may be expected in the amblyopic eye in from 50 to 60 per cent. of cases by properly adjusted glasses. This improvement varies from 20 per cent. to ninefold betterment. 8. While a defectively developed fusion apparatus has much to do with the genesis of esotropia, the influence of hypermetropia and its allied states seems almost as important as in the days of Donders. 9. The part played by astigmatism is no little one. 10. There seems to be no special relation between the degree of refractive error and the degree of deviation. 11. Hypermetropic conditions of from 1 to 4 diopters seem most commonly associated with esotropia. 12. A very high degree of hypermetropia does not necessarily exclude strabismus. 13. If taken before the fifth year, there is no reason why the strabismus should not be cured by non-operative methods in 70 per cent. of cases. This percentage will, in all probability, be increased to 80 per cent. in the next ten years. 14. The results of non-operative treatment in children, if adhered to with any persistence, are infinitely better than any "scissors" statistics thus far offered.

31. **Chronic Dysentery.**—There is no doubt in MacDonald's mind that all chronic cases of dysentery, and most acute ones, should be operated on. The cecum is the home and head center of the germ, whatever one there is, and he believes that operation will, in the future, be just as common as wiring a fractured bone. The operation advocated by him is an inguinal colostomy, the cecum being opened. The edges of the abdominal wound are whipped with a continuous suture fastening the peritoneum to the skin; the cecum is then sutured to this, care being taken that the suture passes only through the peritoneal and muscular coats of the bowel. The wound is then packed with iodoform gauze and the patient returned to bed. Two days later the cecum is opened and potassium permanganate irrigations are begun. A large tube with shoulder is placed in the inguinal wound, and the anus is made patulous by a similar process. Three gallons of a 1 to 10,000 solution is passed through the bowel twice daily. There is some difficulty in closing the wound. MacDonald objects to the old semi-circular flap inasmuch as that leaves two weak places in the abdominal wall instead of one; but if the gut is closed carefully and then dissected back far enough to get to the peritoneal surface of the bowel, and use a Lembert's suture, the closure becomes easy. The permanganate solution should be hot and plenty of it used.

Cincinnati Lancet-Clinic.

November 6.

33 °A Plea for Wider Knowledge Concerning Diseases Which Affect the Joints. C. Travis Dreaper.

33. See abstract in THE JOURNAL of October 29, page 1326.

St. Louis Medical Review.

November 6.

34 Medical Education in Japan. K. Mitsukuri.
35 A Case of Polymyositis; with Blindness. C. Bevill.

Medicine, Detroit.

October.

36 Treatment of Pulmonary Tuberculosis. Albert Abrams.
37 Etiology of Cleft Palate. Eugene S. Talbot.
38 Chloretone in the Vomiting of Pregnancy. C. M. Bowcock.
39 Experiences with Suggestion. Julius Grinker.
40 Hydrocephalus; an Attempt at Classification, with Report of a Case of Pseudotabes Associated with Acute Internal Hydrocephalus. William C. Krauss.
41 Acetonemic Treatment of Typhoid Fever in Fourteen Private Cases. Alphonse Oulman.

November.

42 °Feeding with the Essential Fat of the Tubercle Bacillus. D. MacDonald.
43 A Case of Generalised Blastomycosis. J. H. Cleary.
44 Forensic Relations of the Puerperal Mental State. H. C. B. Alexander.
45 °Imperforate Anus, with Report of a Case. Wm. F. Stucky.
46 Mental Hygiene. Mary Lawson Nott.

42. **Feeding with Essential Fat of Tubercle Bacillus.**—MacDonald claims to have discovered that hydrous cholesterin fat (wool fat) gives the essential tests of the tubercle bacillus. The importance of the discovery is that when patients are fed on it there is a marked increase in weight and a favorable influence on the progress of various chronic wasting diseases. More than half a pound has been administered daily, with excellent results, both in health and disease. About half of the tubercle bacillus consists of fat, which explains the historic therapeutic value of the latter. The author details a number of chemical experiments and confirmatory tests, together with clinical results, to prove his findings.

45. **Imperforate Anus.**—An examination of Stucky's case showed the entire perineum to be smooth with the exception of a small spindle-shaped bleb slightly darker than the surrounding integument, at the posterior margin of and running into the scrotum. No fluctuation nor bulging could be seen. An incision about half an inch long was made at the normal site of the anus. This was increased in depth to one inch without encountering the rectum. It was then decided to cut into the small bleb, hoping that it might have some connection with the bowel. The result was the escape of a small amount of gas, but no meconium. This point proved to be the termination of the rectum, which organ was almost straight, lacking both the curve in the direction of the hollow of the sacrum and coccyx and the curve in the opposite direction near the anus. Although no fecal contents had escaped, no obstruction could be found higher up. A piece of small rubber tubing was introduced and fastened with silk sutures, and the first incision closed with interrupted silk sutures. An hour later the child was given one-half teaspoonful of castor oil, which resulted in a copious action of the bowels. There was no infection, and the wound healed by first intention. The tubing was removed on the sixth day and the silk sutures two days later. The anus began to take on a natural appearance and the stools were normal. No further trouble was experienced with the intestinal tract, but after a few days of apparent improvement in strength and vitality, the patient began to decline steadily and finally (seventeen days after birth) succumbed to marasmus.

Archives of Electrology and Radiology, Chicago.

October.

47 °A Large Fibrosarcoma Treated by Roentgen Radiation. Clarence Edward Skinner.
48 Electric Resonance. Karl G. Frank.

47. **Fibrosarcoma Treated by Roentgen Radiation.**—The tumor in the case cited by Skinner was situated in the lower part of the abdominal wall in the region of a cicatrix, the result of a laparotomy performed three years before, for what was regarded as a fibroid tumor of the uterus. The fibrosarcoma was the size of a cocoanut, filling up the entire iliac fossa, extending nearly to the umbilicus, and two inches beyond the median line to the left. The tumor was very firmly fixed and seemed to involve the abdominal wall. Microscopic examination showed it to be a fibrosarcoma. Erysipelas toxins were used for ten months. During the first two months the growth decreased more than half in size, and for a long time thereafter, while there was no decrease, there was no distinct growth. Later on, the influence of the toxins seemed to have become lost, and there was a slow but gradual increase in size. X-ray applications were then begun, and were administered by means of a tube giving rays of high penetration and backing up a spark of from four to six inches, excited by a machine having 12 thirty-two inch revolving plates, for the first seven months, and by a machine of the same type having 16 revolving plates thirty-two inches in diameter, for the rest of the time. The anode was placed nine inches from the patient's skin and the duration of the application was fifteen minutes. The tube was focused on the middle of the anterior surface of the tumor at one seance, on one side at the next, on the other side at the third, and so on, treating these different

areas successively. One layer of thin toweling was interposed between the source of the rays and the patient's skin, and the face, chest and thighs, below the level of the pubis, were shielded by tin foil, gauge No. 22. The patient received 136 applications within 739 days, the applications being given on an average of every 2.5 days at the beginning of the treatment, then, later on, one in five days, fifteen days and thirty-seven days. Twenty-eight months after beginning the treatment, the patient had increased considerably in weight and the tumor had entirely disappeared. Among the conclusions deduced by Skinner are the following: 1. Roentgen radiation sometimes brings about the entire disappearance of large, deeply located, malignant neoplasms, which have been proven to be hopelessly lethal in their tendency under any other management, and simultaneously restores the patient to apparently perfect health. 2. The fact that it sometimes accomplishes this result, taken in connection with the size of the malignant mass in the case just cited demonstrates that the lack of satisfactory influence which attends its employment in so many cases is not due to weakness, inherent in the remedy itself, nor to mere thickness of the tissues intervening between the pathologic focus and the source of rays, but to some at present undetermined factors. 3. There is probably a direct and intimate connection between systemic toxemia and the disappearance of malignant growths under Rontgen radiation as indicated by the uniform occurrence of sudden diminution in the size of the tumor immediately following each onset of toxemic symptoms during the later course of the case reported. 4. The application of the Roentgen rays to a malignant growth belonging in the same class as the one described should be persisted in as long as the patient's condition will permit, even if no benefit is observable. 5. There is a vast difference between the therapeutic effect of the rays derived from a tube excited by a static machine and those derived from a coil-excited tube, and the difference between the rays derived from these two sources will sometimes constitute the difference between success and failure in the management of deeply located malignant processes.

International Journal of Surgery, New York.

November.

49 Hip and Shoulder Amputations. Myles F. Porter.
50 Broken Links in the Chain of Surgical Asepsis. Walter B. Chase.
51 *Vagino-fixation for Retrodeviation of the Uterus, with a Report of 120 Cases. L. F. Garrigues.
52 The Up-to-date Treatment of Fractures. H. L. Stickney.
53 A New Brace for Fracture of the Thigh. J. F. Myers.

51. Vaginal Fixation of Retrodeviation.—Garrigues presents the results obtained in 120 cases, the uterus being examined seven weeks after operation. Of 78 extra-peritoneal operations, 16 cases were examined and found normal at periods varying from three months to two and a half years. Among the 42 cases operated on by the intraperitoneal method one recurrence was found; 9 were examined at periods varying from three months to two years after operation. Of these 120 cases, 12 became pregnant; of this number 2 aborted, and 1 aborted but later bore a child normally. The rest bore children at term without artificial aid or unusual pain. The patients are all reported to be well since their confinement. There were no deaths following the operation, nor was the bladder wounded. Garrigues' technic may be described, briefly, as follows: Make a longitudinal incision through the vagina extending from 1.5 cm. below the meatus urinarius to well below the bladder. Two flaps are dissected to the sides with the handle of the scalpel, and the forefinger gradually inserted under the bladder to separate this organ from the uterus, which is held anteverted with a sound, and pulled down with a bullet forceps. As the finger is pushed higher it penetrates between the uterus and its peritoneal covering, and the latter is seised with hemostatic forceps and incised. The adnexa are then palpated and freed from adhesions, if they are slight. If the adhesions are dense and the adnexa diseased, the fundus must be delivered through the incision. The adnexa are then ligated and excised, cysts broken, subperitoneal fibroids excised, adhesions torn, etc. The uterus is replaced by traction on the cervix and gentle pressure on the fundus. In closing the peritoneal cavity, care must be taken to approximate the peritoneal edges so as to get only sero-serous adhesions. This is done by passing a medium sized sharply curved needle armed with silkworm gut through the vagina near the urethral end of the vaginal incision, through the peritoneum, the fundus of the uterus, the other side of the peritoneal incision, and finally through the vagina again and tying the suture. It is important for the ultimate result of the operation to insert the suture at about right angles to the tip of a sound introduced into the uterus. A second suture is introduced slightly below the first, but similar in other respects. The rest of the open peritoneum is united with a running catgut suture, and the vagina with interrupted silkworm gut. All cases are first curetted to avoid septic complications. When the anterior vaginal wall is short, a transverse incision just above the cervix is made instead of a longitudinal one, and the vaginal sutures inserted so that the two ends of this incision are united, thus lengthening the anterior vaginal wall. Garrigues lays particular stress on the use of the transverse incision in cases of congenital retroflexion as, in his opinion, the large number of failures reported to permanently correct by various operations the malposition of the uterus in these cases is due to the short anterior vaginal wall pulling the cervix forward and hence the fundus backward. Should the vagina be too narrow to work through to advantage, an oblique vulvovaginal incision is first made, which is subsequently sutured. If an operation on the cervix is required it is performed before the fixation so as not to strain the sutures holding the uterus in place. Should a cystocele exist, a semilunar portion of the vaginal wall is cut away from each side of the longitudinal incision before suturing. After the operation there remains a uterus freely movable in all directions except into retroflexion. The suture material should never be silk, as it often carries infection from the vagina and thus causes a very tight fixation. Silkworm gut is best on account of its dense nature and unirritating properties. The sutures are left in seven weeks, the patient going home in the meantime, and are then removed. The operation is a safe one; the results are durable; no scars are left; the ovaries and tubes can be operated on conveniently if found diseased; the plastic work so frequently required can be readily performed, and there is no difficulty with gestation if the method is well chosen.

Journal of Nervous and Mental Disease, New York.

November.

54 President's Address, at Thirtieth Annual Meeting of the American Neurological Association. Frank R. Fry.
55 *Purulent Myelitis; Focal and Disseminated. Joseph Collins.
56 *Hallucinations. Wm. A. White.

55. Purulent Myelitis.—Collins reports a case of an unmarried woman, 25 years old, who, shortly after an attack of influenza, complained of parasthesia and pain in the left leg and back. Three months later she had to stop work because of weakness of the left leg. The pain and weakness continued to grow worse and nine months after the onset of her illness the right lower extremity became involved. The leg felt cold, there was a burning sensation in the knees, the legs felt stiff, and there was a constant sensation of burning in the lower part of the abdomen. Examination revealed exaggeration of the knee and ankle jerks, patellar and ankle clonus and Babinski jerk; anesthesia on the anterior surface of the left thigh, anesthesia and thermoanesthesia on the outer side of the same area. On the posterior surface there was less disturbance of sensibility than on the anterior. On the inner and outer surfaces of the right thigh there was complete loss of sensibility. On the anterior surface of the right thigh there was still some sensitiveness. Two months later there was complete paraplagia, the left leg being spastic, the right flaccid. Loss of both plantar jerks, knee and ankle jerks present, left greater than the right. Anesthesia, thermo-anesthesia, and some analgesia of both lower extremities from the crests of the ilii and a line drawn around them downward. Just above this line there was a belt of hyperesthesia two inches wide. There was some tenderness at the tenth dorsal vertebra. Death ensued fourteen months after the onset of the illness. At the autopsy no evidences of syphilis were found.

The viscera and other structures of the body revealed no focus from which the abscess of the cord took its origin. The entire lower end of the spinal cord was flooded with thin creamy pus. No abscess cavity was detected until after the cord was sectioned, when a longitudinally placed cavity was found in the sacral region, chiefly in the posterior portion of the gray and partly also in the white matter. It reached from the lower end of the cord about one inch upward. Numerous extensive disseminated purulent foci were found throughout the entire cord. A diagnosis of syphilitic spinal paralysis was first made and, naturally, when the paraplegia was not yet complete, such a diagnosis was quite as tenable as any other. Moreover, there was apparently no attributable cause for a starting point for the abscess formation, save possibly the attack of influenza. The final diagnosis was reached only by exclusion. The onset and course of the disease, its clinical manifestations and the findings at autopsy are of considerable interest.

56. **Hallucination.**—White narrates ten cases illustrating how phenomena, as ordinarily experienced, can graduate into a true hallucination, and arrives at the following conclusions: 1. Hallucinations are false perceptions. To have a false perception there must be something to perceive, and that something is in the environment and can only enter as a factor into the mental life through the intermediation of sensation. Ideas can not be perceived. 2. Hallucinations are secondary sensations either arising in the same sensory field, in which case they may be described as illustrations in the sense of Esquirol, or arising in other sensory fields, in which case their secondary character is quite clear. 3. The mental state in illusions and hallucinations is identical. 4. Given the sensory elements, the falseness in their perception is due to central derangement.

Journal of Cutaneous Diseases, New York.

November.

57 Notes on Certain Post-vaccinal Eruptions. William T. Corlett.

58 *Erysipeloid, with a Record of 329 Cases, of Which 328 Were Caused by Crab Bites, or Lesions Produced by Crabs. T. C. Gilchrist.

59 Granuloma Pyogenicum (Botryomycosis of French authors). M. B. Hartzell.

58. **Erysipeloid.**—The observations made by Gilchrist in his cases are as follows: The incubation period varied from three hours to two days, in the majority of cases the latter. The duration of the disease was about a week, although in many cases it was only three or four days, and in a few extended from ten days to two weeks. In practically all the cases the disease occurred on the fingers or hands, there being only two cases where the lesions appeared on the soles of the feet. The history is practically always that of a bite or injury from a crab. The part bitten becomes red, swollen, painful, hot and accompanied by a throbbing sensation. The lower border of the eruption presents a distinct line of demarcation and is slightly raised. The disease extends slowly from finger to finger, finally encroaching on the back or palm or both sides of the hand. The characteristic slightly raised margin retains its definite bright red outline wherever it advances, but usually presents a rather more acute inflammatory aspect than the enclosed area. A particularly characteristic feature of this dermatitis is that suppuration never occurs, neither do any papules, vesicles nor pustules form on the surface, unless, as very rarely happens, pus organisms infect primary lesions. Desquamation does not follow. There are practically never any constitutional symptoms, except, perhaps, a slight pain extending up the arm. Careful bacteriologic examination failed to reveal the presence of any micro-organism. The disease is differentiated from erythematous eczema by the character and location of the lesion. In eczema also there is intense itching, whereas erysipeloid is accompanied by pain, which is relieved by firm pressure. Erysipelas, on the other hand, is unusual on the hands alone or on the fingers, and it is accompanied by constitutional disturbances. The treatment in these cases consisted of thorough disinfection of the injured part with bichlorid solution, then a carbolic acid solution varying in strength from 1/20 to 1/30 was injected hypodermically at the growing margin of the disease, and finally the affected portion was dressed with iodoform ointment. Unna's salicylic acid plaster was also used. At first 50 per cent. was applied in strips to the diseased portion, and also well beyond the growing edge of the patch. In many cases one application was sufficient to cure the affection. The results of various methods of treatment have shown that the salicylic acid plaster of the strength of 25 per cent. is the best remedy, although plain adhesive plaster is frequently efficacious. After removal of the salicylic plaster, at the end of three days, the skin is white and sodden. A simple ointment is then prescribed.

New Orleans Medical and Surgical Journal.

November.

60 Paratyphoid; with Clinical Illustrations and Comment. T. H. Evans.

61 *Pruritus Considered from a General Standpoint. H. E. Ménage.

62 *A Preliminary Note on a New Clinical Method as an Aid in Diagnosing Renal Impairment. A. C. Eustis.

61. **Pruritis.**—The one remedy which has proven most useful in Menage's experience in the treatment of pruritis is cannabis indica. The initial dose should be small, 5 drops three times a day, well diluted and given after eating and increased gradually until 20 or 30 drops are taken at a dose. Next, in the order of his preference, are camphor monobromate, valerian, musk and castoreum, given separately or combined in pill form in full doses. Locally he uses a combination of carbolic acid, menthol, camphor and chloral. He has also used the galvanic current with good results in a few obstinate cases of localized pruritus. The current should be applied with as much intensity as the patient will and can stand. In general pruritus currents can not be used in any such strength, and in such cases the electric bath with the sinusoidal current, as suggested by Oudin and Bisserie, is the one worth trying.

62. **Diagnosis of Renal Impairment.**—Eustis' method is based on the nitrogen content of the blood and is carried out as follows: Twenty cubic millimeters of blood are sucked up after pricking the ear, in the Gower hemoglobinometer pipette and transferred to a test tube, preferably one six inches long. The pipette is washed out with distilled water into the same test tube and 1 c.c. of concentrated sulphuric acid is added. The mixture is then boiled and small crystals of potassium permanganate are added from time to time, until the black color caused by the charring of the sulphuric acid has entirely disappeared. A water-white solution is thus obtained in a few minutes. After cooling, the acid solution is diluted to 100 c.c. in a Nessler jar and 2 c.c. of Nessler's solution are added. A yellow color is produced, varying in intensity with the amount of ammonium sulphate present. By comparing the color obtained with the color produced by known amounts of a standard ammonium chlorid solution, after the addition of the same amount of Nessler's solution, the nitrogen in the 20 cm. of blood can be ascertained. The standard ammonium chlorid solution used is made by dissolving .314 grams of C. P. ammonium chlorid in 100 c.c. of water. Five cubic centimeters of this solution are diluted with distilled water, sufficient to make 500 c.c. Each cubic centimeter of the dilution contains .01 mg. of ammonia or .008 mg. of nitrogen. By multiplying the number of cubic centimeters of standard ammonia solution required to produce the same color as obtained with the blood by .008, and this result by 5,000, we obtain the milligrams of nitrogen in 100 c.c. of blood. Comparisons of the colors should not be made until the solutions have stood twenty minutes. Thirty minutes in all are required for the entire operation, provided the solutions needed are at hand. Examinations of the blood of 18 normal and healthy individuals have given Eustis a reading of from 40 to 80 mg. of nitrogen per 100 c.c. of blood, and usually they were below 40 mg. Variations in color of less than 1 c.c. were not noted, and he took 40 mg. as his normal. In all cases of nephritis he obtained a high content of nitrogen in the blood, while in those cases in which there was no renal impairment the nitrogen content was low. Three cases are cited in which the diagnosis

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was made from the blood finding alone. From the cases observed Eustis concludes that if the blood of a patient shows a nitrogenous content below .30 mg. of nitrogen per 100 c.c. of blood there is no renal impairment. If the blood shows a nitrogen content of from 120 mg. to 140 mg. per 100 cc., there is partial renal impairment. If the blood shows a nitrogen content of 200 mg. to 100 c.c. of blood, the patient is suffering from uremia. Recommending the method are the short time required for its performance, the small amount of blood needed, its simplicity and its applicability in doubtful cases of uremia.

Louisville Monthly Journal of Medicine and Surgery.
November.

63 Rickets. Gavin Fulton.
64 *Radical Cure of Hernia. Hal C. Wyman.
65 Is the Practice of Producing Abortion Common Among Medical Men? T. B. Greenley.
66 *Death Through Misadventure. W. W. Vinsedge.

64.—*See abstract in THE JOURNAL of October 29, p. 1326.
66.—*Ibid.

Albany Medical Annals.
November.

67 The Genesis of Insanity. J. Montgomery Mosher.
68 New York State Medical Library. Dunkin Van R. Johnston.
69 History of the Bender Hygienic Laboratory. George E. Gorham.

Journal of the Association of Military Surgeons, Carlisle, Pa.
November.

70 The Ideal Military Surgeon. John C. Wise.
71 Outline of the Organization of the Department of Health of the Isthmian Canal Commission, Isthmus of Panama. John W. Ross.

Fort Wayne Medical Journal-Magazine.
October.

72 Surgical Aspects of Tuberculosis. J. C. Fleming.

Quarterly Journal of Inebriety, Hartford, Conn.
October.

73 The Relation of the Pauper Inebriate to the Municipality and the State from an Economic Point of View. Lewis D. Mason.
74 Recent Contributions to Our Knowledge of Alcohol, and Its Action on the Animal Body. Winfield S. Hall.
75 Evolutionary Pathology of Chronic Alcoholism. W. Pood Robertson.
76 The Influence of Alcohol on Digestion. J. H. Kellogg.

Brooklyn Medical Journal.
October.

77 The Nerve Elements of Uterine Contractions. William L. Chapman and Lewis N. Foote.
78 Apoplectic Mutation. William Browning.
79 Fibroid Tumor of the Abdominal Wall. J. R. Taylor.
80 Notes on the Treatment of Cardiac Insufficiency; with Report of a Case of Diphtheritic Myocarditis. Edward E. Cornwall.
81 A Study of Six Cases of Extrauterine Pregnancy. Thomas Bray Spence.
82 Influence of Weather Changes on Man and Some Lower Animals, with a Record of Experiments on Pigeons. E. H. Bartley and W. L. Chapman.

Canadian Practitioner and Review, Toronto.
October.

83 Address, Canadian Medical Association. Simon J. Tunstall.
84 Address in Medicine, Canadian Medical Association. R. C. McKechnie.
85 Surgical Treatment of Complete Descent of the Uterus. B. G. Dudley.
86 Expectancy of Life in Morbid Conditions of the Cardio-Vascular System. Robert J. Dwyer.
87 The Genesis of Insanity. J. Montgomery Mosher.
volvement—Operation and Termination in Fatal Purulent Leptomeningitis. J. D. Gibb Wishart.

Atlanta Journal-Record of Medicine.
October.

88 Cataract Operations—Report of 103 Cases. T. M. McIntosh.
89 Individual Peculiarities of the Male Urethra. W. B. Emery.

Woman's Medical Journal, Toledo.
September.

90 The Chinese Management of a Transverse Presentation. Anna D. Gloss.

Bulletin of the Johns Hopkins Hospital, Baltimore.
October.

91 The Causes of Cardiac Insufficiency. Joseph H. Pratt.
92 Notes on Form of the Cavity of the Knee Joint. Joseph M. Flint.
93 Report of a Case of Acute Myelogenous Leukemia. Hermon C. Gordinier.
94 History of Some Famous Quacks. Francis R. Packard.

Medical Examiner and Practitioner, New York.
October.

95 Syphilis and Life Insurance. Alfred Blaschko.
96 Etiology of Arteriosclerosis. B. Morwitz.
97 Nervous Troubles and Labor Mishaps. E. Poels.

Old Dominion Journal, Richmond, Va.
October.

98 Venereal Disease as a Social Menace. J. N. Upshur.
99 A Plan for the Prevention of Venereal Diseases. Manfred Call.
100 Evolution of Psychiatry; or Progress in the Care and Treatment of the Insane. (To be continued.) William P. Drewry.
101 The Adrenal System and Its Importance in Health and Disease. C. P. Ostrom.
102 The Diagnostic Value of Hematuria. W. M. Randolph.
103 Medical Organization. James B. Bullitt.
104 What Re-organization Has Done for the Michigan State Medical Society. Andrew P. Biddle.
105 The Success of the Wisconsin Reorganization Movement. C. S. Sheldon.

Archives of Otology, New Rochelle.
October.

106 Case of Thrombosis of the Jugular Bulb Operation—Recovery. Carl Koller.
107 Case of Pulmonary Tuberculosis, with Interstitial Neuritis of Both Cochlear Nerves Together with Persistent Embryonic Adhesions in the Scala Tympani. F. Siebenmann.
108 The Radical Operation for Chronic Empyema of the Frontal Sinus According to Killian. Dr. Eschweiler.
109 The Operative Treatment of Otitis Intracranial Complications. Prof. Denker.
110 Otitis Ibrain Abscess. V. Uchermann.
111 A Phonographic Aoumeter. W. Sohler Bryant.

American Practitioner and News, Louisville.
October 1.

112 Accidental Corneal Infections. M. F. Coomes.
113 Fractures and Dislocations of the Femur. Frank B. Norton.
114 Acute Inflammation. Will Salin.

Therapeutic Gazette, Detroit.
October 15.

115 The Problems of Therapeutics. (To be concluded.) Lauder Brunton.
116 The Relation of Therapeutics to Other Sciences in the Nineteenth Century. Oscar Liebreich.
117 Consideration of Some of the Methods for the Treatment of Cancer of the Rectum. Lewis H. Adler.
118 Calomel as Intestinal Antiseptic. Alexander McAlister.

Medical Sentinel, Portland, Ore.
October.

119 Address, Oregon State Medical Association. Walter T. Williamson.
120 Humanity and Common Senses Versus Idealism in Venereal Prophylaxis. G. S. Peterkin.
121 Cancer of the Large Bowel. C. H. Mayo.

Northwest Medicine, Seattle, Wash.
October.

122 Address, Canadian Medical Association. Simon J. Tunstall.
123 What Is Fever? Woods Hutchinson.
124 The Diagnosis of Surgical Pathology in the Upper Half of the Abdomen. H. D. Niles.
125 Notes on Treatment of Gonorrhea. W. R. Parsons.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
October 29.

1 The Limits of Freyer's Operation of Suprapubic Prostatectomy. J. W. T. Walker.
2 *A Further Series of 57 Cases of Total Extirpation of the Prostate for Radical Cure of Enlargement of That Organ. P. J. Freyer.
3 The Cause of Enlarged Prostate, Together with a Note on the Prostatic Glands. Herbert T. Herring.
4 The Pathology of Prostatic Enlargement. P. L. Daniel.
5 *Chronic Appendicitis. W. Blair Bell.
6 *Congenital Hypertrophic Stenosis of the Pylorus. Jas. H. Nicoll.
7 A Series of Cases of Resection of Malignant Growths of the Colon. Charles A. Morton.
8 *The Remote Results of Operations for Varicose Veins of the Lower Extremities. Robert Kennedy.
9 Use of Paraffin in Plastic Surgery. Stephen Paget.
10 Two Cases of Lightning-Stroke. T. Lynn Thomas.
11 Case Illustrating the Operative Treatment of Paralysis of the Serratus Magnus by Muscle Grafting. A. H. Tubby.
12 Remarks on the Value of Gastrojejunostomy and Jejunojejunostomy in Cases of Chronic Gastric Ulcer, With and Without Adhesions and With and Without Dilatation of the Stomach. T. Gelston Atkins.
13 Two Cases of Urethro-vaginal Fistula Treated by Operation. Frederick J. McCann.
14 A Further Contribution Towards the Study of the Natural History of Tubal Gestation. Augustus W. Addinsell.

2.—See abstract in THE JOURNAL of September 3, p. 690.

5. **Chronic Appendicitis.**—A new method of closing certain wounds is described by Bell and the term "autorrhaphy" is applied to it. This method, or a modification of it, can be utilized to close wounds in the abdominal wall and wherever aponeurotic tissue of sufficient strength is available. A fairly long skin incision is made, rather lower and nearer the ant-

terior superior iliac spine than is indicated in the text-books. It is the most convenient incision for reaching the appendix at once and it also gives better strands of the aponeurosis of the external oblique which are to be utilized in closing the wound. In a chronic case or in the "quiescent" period of an intermittent case, the best and usually adopted method of separating the muscles in the direction of the fibers should be employed. When the aponeurosis of the external oblique is reached it must be very carefully cleared of its fascial investment, in order that the fibers may separate easily when required later. This done, a clear interfibrous space is found and opened for the whole length of the wound with the knife. The divided aponeurosis is then raised and undermined for about half an inch throughout the length of the incision on either side of its division. Next, the internal oblique is divided in the ordinary way in the direction of its fibers and the transversalis fascia and peritoneum in the same direction; as a rule, quite a small opening is required in order to deliver and remove the appendix. The object of the operation being successfully accomplished, the divided external oblique aponeurosis is seized on the side nearest the umbilicus and an interfibrous space sought for about one-sixteenth inch from the edge. This space is opened with the point of the knife, and the handle or a blunt dissector used to split the isolated strand up to the ends of the original incision. This divided strand is removed with knife or scissors, and is threaded on one of the special needles with a large eye, or it is seized at one extremity by a modified Cleveland needle forceps and then passed through the internal oblique and transversalis muscles and the peritoneum on either side of their division and tied. As a rule, one suture is quite sufficient to close the innermost layers, but should another be required it can be obtained in the same way and from the same side as the first. Next, two other strands are separated in the same way, one on each side of the incision through the external oblique, that on the umbilical side being freed at the lower end of the wound while the other strand—on the side nearest the anterior superior iliac spine—is freed at the top end of the incision. The external oblique is then laced up from either end of the incision, the strands meeting and being tied in the middle. The skin may then be closed with an ordinary or with a wire subcutaneous suture. The advantages of the method are obvious. No foreign material need be introduced into the abdominal wall. Instead of irritating sutures in the sensitive muscles, living material is used which belongs to the part and will go on living. There is little danger of sepsis.

6. **Congenital Hypertrophic Stenosis of Pylorus.**—Nicoll holds that the appropriate treatment of hypertrophic stenosis of the pylorus is to "burst up" the thickened pyloric ring by forcible over-stretching from within, as one does in obstinate urethral stricture. He is decidedly in favor of a combination of Loreta's operation with gastroenterostomy. This has been completely successful in several cases. In one case, however, no relief was obtained, and the patient died six days after operation; in another case apparent cure was followed by a return of the vomiting at the end of two months. The operative procedure adopted by Nicoll may be stated thus: Open the stomach, within easy reach of the pylorus; pass the dressing forceps through the incision into the stomach, and gradually force them through the contracted pylorus; stretch the pylorus until the peritoneal coat slightly ruptures. Then decide the further course of the operation by the infant's general condition. If collapse be imminent, close the stomach and abdomen rapidly by suture, regarding the operation as a temporary measure merely. If, however, the child's condition permits, complete the operation by a gastroenterostomy, making use of the incision already made in the stomach wall. He believes that the thickness of the pyloric wall renders pyloroplasty unsuitable in this instance.

8. **Operations for Varicose Veins.**—The method employed by Kennedy in dealing with varicose veins of the leg is to remove in every case the internal saphena in the thigh up to a point within one and a half or two inches of its termination at the saphenous opening, whether the vein in the thigh appears to be varicose or not. When the vein has been removed from the thigh its removal is continued downwards into the leg and the prominent varices are also removed as far down as they extend, together with any prominent tributary in the leg. The total length of vein removed varies from sixteen to twenty-one inches, so that the internal saphena is almost entirely removed. In no case does the slightest untoward result follow the operation; and with the exception of two cases, which had a history of syphilis, the long wounds all healed up perfectly by first intention. A reaction on the circulation of the leg need not be feared, for the vein which is removed lost its function of returning blood long before the operation was undertaken. The results in every instance have stood the test of time. Patients examined at the end of periods ranging up to five years were found to be not only free from symptoms, but also from any recurrence of dilated veins.

The Lancet, London.

October 29.

15 *Some Remarks on the Application of the Principles of Surgery to the Treatment of Injury and Acute Infection When Occurring Within the Abdomen. Charles A. Ballance.
16 The Problems of Cancer. J. Beard.
17 *The Wreck of the Australia. James W. Barrack and W. F. Orr.
18 *A Clinical Study of Actinomycosis. Robert Knox.
19 Dental Disease and the Medical Profession. R. Denison Pedley.
20 A Case of Ulcerative Colitis with Multiple Perforations. A. Garrick Wilson.
21 A Case of Fibromyoma of the Fundus with Carcinoma of the Cervix Uteri. John Phillips.
22 The Problem of the Morally Defective. W. A. Potts.
23 *Streptococcal Infection and the Use of Antistreptococcic Serum. S. Anderson.
24 Notes of Midwifery Cases in Madagascar. C. F. A. Moss.

15. **Treatment of Injury and Acute Infection.**—The ideal treatment of general peritonitis, according to Ballance, is continuous irrigation, or the continuous bath treatment so successfully employed in acute suppuration in joints. He has twice endeavored to carry out this treatment with baths of normal saline solution, but, unfortunately, both cases were unsuccessful. One was a case of duodenal ulcer which had perforated two days before operation. The other was a case where general peritonitis had occurred from a first attack of appendicitis; the operation was not performed until the seventh day. Both patients lived forty-eight hours. In both, the intestines were allowed to float out through the single long incision into the bath of saline solution. So rapidly did the purulent matter escape into the bath that several assistants were required to keep the bath water even approximately clean. At the necropsies the abdominal cavities were absolutely clean. Ballance suggests that it would probably be better after dealing with the local cause of the peritonitis rapidly to insert three or four drainage tubes through reasonably small openings in various situations and then at once to commence the bath treatment. This would obviate manipulation of the intestine which causes so much shock.

17. **Wreck of the Australia.**—Incident to the investigations following the wreck of the steamer *Australia*, the following regulations were adopted by the marine board of Victoria for the visual requirements of those who propose to enter the pilot service: 1. Vision to be 6/6 in each eye without glasses. 2. The total error of refraction is not to exceed 1 D., and of this astigmatism is not to exceed 0.5 D. This estimate is to be made by retinoscopy with the eye under the influence of a mydriatic. 3. The pupillary reflexes are to be normal. The fundus to be free from disease, the visual fields to be normal and the balance of the ocular muscles is to be normal. A candidate is to possess binocular vision. 4. Color vision is to be normal, as tested by colored wools and colored discs. 5. If during the course of service the vision deteriorates, the pilot must retire from the service. 6. If the pilot should be concerned in any accident, he should at once undergo re-examination. 7. The pilots are to be examined annually and must retire at 60 years of age. (See item concerning Health of Pilots in THE JOURNAL, November 5, page 1387.)

18. **Clinical Study of Actinomycosis.**—Knox reports three cases of actinomycosis occurring in two boys and their sister

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who had been in the habit of visiting in the country on a farm for several years in succession. The first patient developed her serious symptoms at the farm in the shape of an attack of pleurisy with high temperature. The two boys had adenoids for years. All three patients had had trouble with their teeth. They all suffered from colds in the head and congested throats at variable periods, and they all had some glandular trouble. In the case of the girl several of the sw-llings developed into abscesses, which contained the characteristic fungus. One boy improved after his faulty teeth were attended to and the adenoids removed. The other two patients responded to iodids and a marked improvement in health was noted. Knox concludes that the infection in these cases occurred through the mouth, probably through the carious teeth. An early examination of expectoration or pus is the only certain method of diagnosis; in fact, an early diagnosis can only be made by the aid of the microscope. Surgical measures should be instituted at once if the lesion is superficial. It is the most rational and effective treatment. Iodid of potassium appears to be a specific in early cases, but the remedy must be pushed to its extreme limit. It appears that patients suffering from actinomycosis are very tolerant to this drug. One of Knox's cases took, on an average, 103 grains daily without exhibiting any undue symptoms.

23. Antistreptococcus Serum in Infection.—Anderson has made use of antistreptococcus serum in two cases of streptococcal infection with good results. To achieve the best result the following factors seem necessary: 1. That where the infection is "single" and polyvalent serum is obtainable possessing the "immune" body, it should be applied as soon as the illness is recognized, the object being to inject before much toxin is formed. 2. That the serum should be as fresh as possible. 3. That in those cases in which the serum is doing good there is no danger in administering an excess, and that in those cases where there is no apparent benefit there is no evidence to show that it does harm. 4. That since the serum acts mainly by increasing phagocytosis and since, in certain cases, very little antidote is formed, the administration of the serum should be continued for some time after apparent recovery, until its action is quite complete.

Bulletin de l'Académie de Médecine, Paris.

Last indexed page 761.

25 (LXVIII, No. 21.) °De l'embolie et de la phlébite. P. Reynier.
26 Anophelès et paludisme à Madagascar. Prophylaxie du paludisme. A. Laveran.

25. Treatment of Embolism and Phlebitis.—Reynier takes issue with Lucas-Championnière in regard to the treatment of phlebitis with exercise and massage. He reaffirms the necessity for repose and for even exaggerated prudence in the treatment of phlebitis, old or recent. Immobilization at first, and afterward careful refraining from any exaggerated fatigue, repose at the slightest suspicion of pain or edema—"these measures will protect better than massage or movement against embolism, the Damocles' sword always over our heads."

Revue de Chirurgie, Paris.

Last indexed page 1178.

27 (XXIV, No. 10.) °Diverticules de l'appendice et appendicite diverticulaire. Lejars and Menetrier.
28 Fracture de l'épiphyse inférieure du radius, causée par la manivelle de mise en marche des moteurs d'automobile. C. Ghillini.
29 °Les lipomes du sein et de la région mammaire. J. Delage and Massabiau.

27. Diverticula of the Appendix.—Lejars gives illustrations of the diseased appendix in a number of cases in which diverticula of varying shapes and sizes were discovered. They are probably the result of the formation of an abscess in the wall, the neck opening into the lumen of the appendix being comparatively narrow. When the abscess is evacuated the cavity persists, forming a recess liable to harbor microbes, the thinness of the walls inviting perforation. These diverticula may explain recurrences of appendicitis and the perforation in apparently mild cases. The frequent localization of these diverticula on the adherent margin of the appendix may explain likewise certain cases of subperitoneal iliac suppuration originating in the appendix. He has had occasion to operate in one case of deep phlegmon under the iliac peritoneum, combined with an intraperitoneal iliac phlegmon. The origin of the trouble may be ascribed to perforation of the meso-appendix consecutive to perforation of the adherent margin of the appendix, probably the result of suppuration in a diverticulum at this point.

29. Lipoma of the Breast.—Out of the 18 cases found in the literature 5 were men. The affection is essentially benign, and a single lipoma is readily shelled out. In case of multiple, deforming tumors, ablation of the breast may be necessary. In a personal case described the breast "resembled a bag full of oranges," and was excised. The other breast was entirely normal.

Semaine Médicale, Paris.

30 (XIV, No. 41.) °L'embolie graisseuse consécutive au redressement brusque des articulations ankylosées. F. de Quervain.
31 L'hospitalisation des aliénés dangereux et criminels dans les divers pays.
32 (No. 42.) La cérébro-sclérose lacunaire progressive d'origine artérielle. J. Grasset.
33 The French Laws in Regard to Foreign Physicians Attending a Patient in France.—Dans quelles conditions un médecin étranger qui vient soigner un malade en France commet-il le délit d'exercice illégal de la médecine?

30. Fat Embolism After Forcible Straightening of a Stiff Joint.—De Quervain has had a case of threatening fat embolism occur after forcible straightening of an ankylosed knee and ankle consecutive to osteomyelitis of the tibia. The straightening was done with the utmost care and the minimum of force, and yet, thirty-six hours later, symptoms developed suggesting fat embolism—bloody sputa, dyspnea, rapid pulse, temperature of 40 C. and frequent vomiting. A large amount of fat in the urine confirmed the diagnosis, but the case terminated in the recovery of the patient, a lad of 13. Search in the literature revealed 10 similar cases, all fatal. It is probable that fat embolism has occurred more frequently than these statistics would indicate, but has escaped attention in the cases with favorable outcome. The joint requiring straightening was always the knee or ankle in the cases on record. There is a specially large proportion of cancellous tissue in these joints, much more than in the wrist and elbow. They are further distinguished by the fact that the bone has to be compressed in straightening them, the more, the greater the deformity. In 7 out of the 11 cases several joints had been straightened at one time, both knees in 4 instances. The long immovability of the joint entails atrophy not only of the muscles but of the bone itself. The true bone substance becomes substituted by adipose tissue. This substitution of fatty marrow for the bone facilitates its compression during the maneuver, but also supplies an abnormal amount of fat. Compression of any bone long condemned to inactivity shows astonishing softness of the bone tissue while a reddish juice escapes, like an emulsion of blood and fat. In all the cases above mentioned the joint had been immovable for a year at least, with one exception, in which the ankylosis was only of five months' duration. He describes the three ways in which fat embolism might be induced by forcible straightening of an ankylosed joint, and adds certain points useful for prophylaxis. If the patient exhibits signs of the lymphatic diathesis which Payr regards as a factor, it is better to err from excess of caution rather than the reverse. The physician should refrain from straightening more than one joint at a time. He should bear in mind the possibility of osteoporosis resulting from the long inaction of the parts. A further important aid is afforded by radiography, comparing the stiff with the normal joint. If the bone is discovered to be abnormally porous it is better to abandon the idea of forcible straightening even of a single joint, and apply more gradual measures. They are liable to be more effectual the more pronounced the osteoporosis.

Archiv f. Gynäkologie, Berlin.

Last indexed page 578.

34 (LXXIII, No. 2.) °Ueber das Verhalten der Leukocyten bei Gynäkologischen Erkrankungen und während der Geburt. Pankow.
35 Beitrag zum Studium der Cysten an den breiten Mutterbändern (in broad ligaments). C. Gibelli.

36 Fall von Endothelioma lymphaticum ovarii. G. Heinricius.
37 *Pure Septicemia. O. Kneise.—Zur Kenntnis der reinen Septikämie Zugleich ein Vorschlag zu einheitlicher Einteilung und Benennung septischer Wunderkrankungen.
38 Zur Anatomie des periurethralen Abscesses beim Weibe (in women). J. Halban und J. Tandler.
39 Klinisch-bacteriologische Untersuchungen über Icterus gravis bei einer Gravida. G. de Paoli and P. Givelli.
40 Negative Action of Castration on Phosphorus in Female Organism. F. Heymann.—Zur Einwirkung der Castration auf den Phosphorgehalt des weiblichen Organismus.
42 Zur Etiologie des Prolapsus Uteri. O. Burger.
43 *Birth Act in Isolated Uterus. E. M. Kurdinowsky.—Der Geburtsakt am isolierten Uterus beobachtet. Adrenalin als ein Gebärmuttermittel.

34. Blood Count in Gynecologic Affections.—Pankow relates the particulars of his study of the blood count in a large number of patients at the Jena gynecologic clinic. He has become convinced that repeated finding of more than 10,000 leucocytes always indicates a suppurative affection in the adnexa if other causes can be excluded.

37. Pure Septicemia.—Kneise reports a case in which the heart, liver and kidneys were found studded with streptococci the fourteenth day after spontaneous delivery, but there had been no chills and no evidence of local reaction could be found anywhere in the tissues. He thinks that this kind of puerperal infection—general affection with dissemination by way of the blood—should be called pure septicemia. The subject in this case was a woman of 32, a vii-para, who had been examined *in partu* fifteen times by the midwife.

43. Birth in Isolated Uterus.—Kurdinowsky nourished with Locke's fluid the isolated uterus of rabbits. He was able in this way to keep the uterus and its appendages "alive" for nearly fifty hours in one instance. Each contraction of the uterus was registered with a Ludwig kymograph. The phenomena observed establish that the uterus—entirely independent of the influences of the cerebrospinal nervous system—is capable of accomplishing the birth function. Another result of the research described is that adrenalin was found to exert a much more energetic action on the contractions of the uterus than any of the drugs supposed to be specific for this purpose. This fact suggests further study of adrenalin in this line.

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed page 1345.

44 (LXXIV, No. 1.) *Aseptic Healing of Tissue Necrosis. Burkhart.—Experimentelle Untersuchungen über die aseptische Einheilung direkt erzeugter Gewebsnekrosen.
45 Die Behandlung der diver-grossen Hernien. A. Adelung.
46 Ueber Ureteren und Blasen-Resektionen bei ausgedehnten Uterus-Carcinomen. A. Depage and L. Mayer.
47 Die chronische Colitis und ihre Behandlung auf Grund chirurgischer Erfahrungen. D. v. Beck.
48 Ueber psychische Störungen bei einem Stirnhirn-Abscess (in frontal lobe). Borchard.
49 *Intrahepatische Cholelithiasis. E. Beer.
50 Einiges über Pankreas-Erkrankungen. Bardenheuer.
51 Ueber Früh-Operation der Nieren-Tuberkulose (of kidney). H. Kümmell.
52 *Ueber Entstehung und Behandlung der Cong. Blasen-Divertikel und Doppelblasen (double bladder). R. Pagenstecher.
53 Ueber die Catgut-Naht bei frischer und bei veralteter Patella-Fraktur. Riedel.
54 (No. 2.) Zur pathologie und Therapie des Magen-Volvulus (of stomach). M. Borchardt.
55 *Die Resection des Nebenhodens bei der Tuberkulose (epididymis). W. Bogoljuboff.
56 Welchen Rückschluss gestatten uns heute die klinischen Zeichen der Blinddarmentzündung auf den pathologischen Zustand des Wurmfortsatzes und der Bauchhöhle? (physical signs of cecitis as indications of condition of appendix, etc.). C. Lauenstein.
57 *Uebertragung ungestielter Periost-Knochen-Lappen zur Heilung von Pseudarthrosen und Knochenhöhlen (unpeduncutated flaps for bone cavities, etc.). F. v. Mangoldt.
58 Ueber indurative Pankreatitis. Barth.
59 Ueber Operationen an Hufeisennieren (horse-shoe kidney). Ibid.
60 *Neue Beleuchtungsvorrichtung für Operations Säle (new illuminator). Krönig and Gliedentopf (Jena).
61 Ueber Spät recidive des Carcinoms (late recurrences). Jordan.
62 Ueber Wundbehandlung mit Euguform (substitute for iodoform). J. Vanicky.
63 Zur Frage der Röntgen-Therapie des Carcinoms. Perthes.
64 Multiple Knochen-Sarkome mit Ostitis deformans. L. Rehn.
65 *Ueber Dermatitis der Hand nach Röntgenbestrahlung. R. Mühsam.
66 Fall von subcutaner Ureter-Verletzung. Heilung durch Nieren-Exstirpation (ureter injury requiring extirpation of kidney). Herbold.
67 Total Exstirpation der Scapula wegen Osteomyelitis. F. Haas.
68 Zur Behandlung der Luxatio patellæ inveterata. E. Graser.
69 Beiträge zu den plastischen Operationen. W. Kausch.
70 Ueber traumatische Leber-Ruptur mit späterer Ausstossung grosser Leber-Sequester (of liver). E. Graser.

44. Aseptic Healing of Tissue Necrosis.—Burkhard concludes from the experimental research described that tissue which becomes crushed or cauterized during an aseptic operation scarcely ever induces a suppurative exudation. This is more liable to follow cauterization. The suppuration is always benign and generally becomes spontaneously absorbed. Absorption of necrosed tissue the size of a bean required a few months before it was complete. The inflammatory exudation and deposit of fibrin that follow implantation of a crushed or cauterized scrap of muscle in the musculature of a healthy rabbit never progressed to an actual abscess in the absence of infection, but it produces a place of lesser resistance and may complicate and delay healing.

49. Intrahepatic Cholelithiasis.—Beer discovered stones in the liver in 6 out of 72 cadavers with evidences of cholelithiasis, noted during the examination of the liver from 250 cadavers. Intrahepatic concrements apparently require three factors for their production, stagnation of bile, cholangitis and a tendency to stone formation. It is possible that stones lurking in the liver may explain certain cases of supposed reformation of gallstones. The stone may induce inflammation in the liver or may pass into the gall bladder or bile duct and continue to increase in size. Consequently Kehr's plan of draining the hepaticus has, besides its other advantages, that of preventing trouble from this source. It should not be restricted to the severer cases, but should be applied in the mild ones, especially those with a history of occlusion of the bile duct and cholangitis. A stone in the liver may entail the most serious consequences and the formation of such a stone should be prevented at almost any cost. When lithiasis and cholangitis are once determined an operation before the second month would avert all danger from this source.

52. Treatment of "Double Bladder."—Pagenstecher mentions the various drawbacks to different modes of treating diverticula of the bladder, and describes his own technic. Extirpation of the diverticulum is the best means of relief, but it is always a difficult operation on account of the reimplantation of the ureter which is usually necessary. For this reason the sacral route is preferable. He cured a patient by this means, although a fistula into the bladder required some time before it spontaneously healed. His article is a comprehensive study of the cases on record of congenital diverticula of the bladder, vesica duplex and bipartita, and hour-glass bladder. His case is the first on record in which a large congenital diverticulum was successfully operated on by the sacral route.

55. Resection of Epididymis on Account of Tuberculosis.—To the 166 cases on record Bogoljuboff adds 12 from his own experience. The results of resection are better when it is total than partial. A large majority of the patients are permanently cured and recurrence in the testicles is rare. Resection of the epididymis, supplementing excision of a tuberculous focus in the testicle, is frequently successful. Potentia coeundi does not seem to be impaired by resection of the epididymis on one or both sides, and the testicle retains its normal functions. Resection of the epididymis on one or both sides may in some cases have a favorable influence on existing tuberculous processes in the prostate or seminal vesicles, leading to complete and permanent recovery. This occurred in 19 out of 45 cases. Lung processes were improved in 8 out of 32 cases. Tuberculosis of the testicles usually starts in the epididymis, where it remains circumscribed for a long time before it invades the testicle. The prognosis is equally good after resection of the epididymis and vas deferens and anastomosis. This was done in all but 2 of the personal cases described. The technic of this intervention was mentioned in The Journal, xlii, page 1458.

57. Implantation of Flaps to Fill Bone Cavities.—In 2 cases of osteomyelitis with extensive loss of substance, von Mangoldt induced regeneration of the bone by implantation of unpedunculated flaps of periosteum and bone taken from the tibia. A number of radiograms show the progressive growth of new bone. The subjects were boys of 8. The flap for one was 7.5 cm. long by 2 cm. wide, and for the other 10 cm. long.

60. New Illuminator for Operating Rooms.—To avoid the heat and the vitiation of the air from ordinary lights in an operating room Krönig and Siedentopf have devised an illuminator on the principle of the lantern used for throwing pictures on a screen. The lantern stands outside the room, and the shaft of light enters through an opening in the wall, strikes a mirror in the ceiling and is reflected down on the operating table. The intensity of the light can be regulated and it can be moved to various points as needed. The parts are illuminated with 20,000 candle power, a light so intense that for ordinary purposes it is shaded and the full strength is used only when inspecting cavities. The details of the illuminator can be easily understood from the illustrations. Some of them are reproduced in the last *Centralblatt f. Chirurgie*, No. 42.

65. Roentgen Dermatitis.—In the case described the findings indicated an obliterating endarteritis. The patient was a physician who had had occasion to work with the Roentgen rays for three years. A chronic ulceration developed at the base of one of the finger nails, and the pain became so severe that the finger was finally amputated two years after the ulceration developed. The history and the literature on *x*-ray burns are added.

Beiträge zur klin. Chirurgie, Tübingen.

Last indexed page 1387.

71 (XLIII, No. 1.) *Anatomische und klinische Untersuchungen über die Magen- und Darm-Carcinome (cancers in digestive tract). W. Petersen and F. Colmers.
72 *Beiträge zur Rückenmarks-Chirurgie (of spine). F. Selberg.
73 Ueber Schrotschussverletzungen bei Meeresangehörigen mit besonderer Berücksichtigung des Hinzutretens von Wundstarrkrampf (tetanus after shot wounds). G. Schmidt.
74 Ueber die mit Gallensteinsymptomen verlaufende chronische Pankreatitis (4 cases with gallstone symptoms). L. Arnsperger.
75 Ueber einen in Anschluss an einen Leber-Abscess entstandenen Fall von Lungen-Abscess. Ossig.

71. Carcinomas in Digestive Tract.—The material reviewed includes 68 cases of cancer in the stomach, 22 in the colon and 212 in the rectum. The malignancy of the various kinds of cancer differs widely, so that exploratory excision should always precede operation. The writers describe the unicentric growth, anatomic findings, etc., of the various forms, and remark that the mode of growth of cancers in the digestive tract excludes a parasitic etiology. It seems to be possible that non-cancerous cells may be deported from the cancerous organ. The article is illustrated with 16 plates and 117 cuts in the text. Gastric cancer spreads along the inner wall of the stomach; cancer in the colon remains limited to a circumscribed spot, while cancer in the rectum spreads little inside the rectum, but has a tendency to involve early the pararectal tissue.

72. Surgery of Spine.—One of the 4 cases described was an extradural lipoma causing compression of the spinal cord, one was a tuberculous meningitis, another spondylitis and another a sarcoma in the pia. The focus was freely exposed and excised and the patients with the lipoma and the tuberculous spondylitis were permanently cured. Every progressive tumor in the spine should be operated on, as the outcome is otherwise fatal, but the prospects of success are not always certain. Only a few tumors in the spine are capable of being radically removed. When the cord is involved the growth is inoperable. But when a lipoma, fibroma, psammoma, echinococcus or exostosis has developed and compresses, but does not encroach on, the cord, success may be counted on. Mere diagnosis of the segment affords no information as to this point. The first symptoms of a surgical spinal affection may be restricted to simple bladder disturbances. The pains are often taken to be sciatica or intercostal neuralgia.

Berliner klinische Wochenschrift.

76 (XLI, No. 41, Salkowski number.) *Recent Studies of Chemistry of Albumin. A. Kossel.—Neuere Ergebnisse der Eiweisschemie.
77 *Action of Quinic Acid on Lime Metabolism. E. Oberndörffer.—Die Wirkung der Chinasäure auf den Kalkstoffwechsel des Menschen.
78 New Staining Reactions of Sugar. A. Neumann.—Neue Farbenreactionen der Zucker.
79 *Action of Lead on Uterus. L. Lewin.—Ueber die Wirkung des Bleis auf die Gebärmutter.
80 *Diagnosis by "Test Diet." H. Strauss.—Ueber Fortschritte der Darmdiagnostik durch die "Probediät."
81 Carbohydrates During Autolysis. C. Neuberg.—Ueber das Verhalten der Kohlehydrate bei der Autolyse und zur Frage nach der Bindung der Kohlehydratgruppe in den Eiweisskörpern.
82 *Elaboration of Glycuronic Acid. J. Wohlgemuth.—Ueber Glukuronsäurebildung beim Menschen.
83 Studies of Pus. C. Posner.—Eiterstudien.

76. Chemistry of Albumin.—We have learned that the albumin molecule is composed of a number of organic groups which can be easily separated, but which retain their separate identity. The albumin molecule is thus like a large vessel which contains various organic compounds resulting from the vital activity of the organism. The vessel contains sometimes more of certain of these compounds than of others. The protoids contain usually three times as many atom groups as the protamins and the latter are thus simpler in their composition and easier to study. They have been found hitherto only in the spermatozoa of fishes. The varying composition of the albumin molecule probably corresponds to varying physiologic purposes. Experiments on dogs showed that phosphorus intoxication causes chemical changes in the albumin bodies in the liver. Certain compounds in the albumin molecules diminish in quantity, while others increase. The large amount of nuclear substance in young, growing tissues is an important factor in these variations. Kossel long ago called attention to the genetic connection between nuclein and hypoxanthin and xanthin, adenin and guanin, and his later research has shown that uracil, thymin and cytosin belong in the same series of nuclein derivates. The different arrangement of the carbon and nitrogen atoms in these and in arginin and the imidazol ring suggests that this grouping is a means or betweenproduct in these synthetic processes.

77. Action of Quinic Acid on Lime Metabolism.—Oberndörffer has been studying on his own person the elimination of lime under the influence of ingested acid. He reviews the experiences of Rumpf and others which have established the possibility of thus influencing the output of lime, and gives the details of his own experiments. He preferred to use quinic acid, and found that the elimination of lime in both stools and urine far surpassed the amount of lime ingested. All but 4 per cent. was eliminated through the stools. The phenomena observed indicate that the quinic acid is eliminated in combination with the lime, and by way of the intestines. He has not attempted to apply to the sick the data thus learned from a healthy subject, but the results observed certainly encourage further research in this line of possible therapeusis for arteriosclerosis, etc.

79. Action of Lead on Uterus.—Lewin mentions that professional lead poisoning is more common among women than men. In Vienna 26.4 per cent. of the women, and only 6.9 per cent. of the male employes in the type foundries, and 80 per cent. of the women making lead foil capsules are victims of lead poisoning. He has been examining 81 such women, and found that out of 123 pregnancies there are only 14 living children. Lead poisoning in the father alone leads to equally direful consequences. In 7 such married couples, with 32 pregnancies, there was abortion in 11 cases, and only 5 of the children survived to the third year, and 3 of these died soon after. Lewin comments with approval on the regulations in France which exclude women from trades using phosphorus, arsenic, chromates, etc. He thinks that the state should interfere to prevent this wholesale slaughter of the innocents and inevitable decay of the worker.

80. Test Diet in Diagnosis.—Strauss regards the use of the Schmidt and Strassburger test diet as a great progress in the diagnosis of the intestinal functions. He uses a diet made up from the hospital kitchen: 1.5 liter milk, 80 gm. scraped meat, 200 gm. soft mashed potato, 2 eggs, 40 gm. butter, and soup made with 40 gm. oatmeal, .25 liter bouillon, and 6 zwieback, each 18 gm. The aspect and smell of the stools on this uniform test diet and the interval before they appear are important points for the diagnosis. When a healthy subject takes the

test diet, marked off with carmin, the first stained stools appear in about 15 to 25 hours. An interval of 10 to 15 hours was observed in his experience only in colitic processes, especially when the lower part of the colon was involved. An interval of 3 to 5 hours was noted only in conditions accompanied by excessive peristalsis. Study of the mucus content and of the reaction of the stool is more reliable than after a single test meal. A still further means by which the test diet can be utilized is for determination of the tolerance for certain articles of food. For this he repeats the test diet, marking it off with charcoal, giving twice or four times the amount of meat, potato or butter, or reducing them in like proportions. Careful study of the subjective findings at the same time will aid in selection of an elective diet. He prefers for the fermentation test a large, graduated reagent glass with a rubber cover allowing the passage of a U-shaped tube. This shows the intensity of the fermentation during given periods, and also the amount of carbonic acid generated. He gives the details of the standard technic he has adopted for this test. The microscope shows the amount of digestion of fat and utilization of starch, and the aloin test will reveal "occult" bleeding. He further ascertains the amount of indican. This differentiates a "putrid" from a "bland" diarrhea.

82. Elaboration of Glycuronic Acid in Man.—Wohlgemuth describes the case of a physician who swallowed by mistake .75 gm. of cocain and then took amyl nitrite, followed by nearly a pint of brandy. Artificial respiration was kept up for several hours with inhalation of oxygen, and camphor was given subcutaneously. In two weeks the patient was fully restored. The urine contained large proportions of grape sugar at first and later of glycuronic acid. These findings suggest that the cocain and alcohol had injured the organism to such an extent that its power of oxidation was temporarily reduced. It was incapable of oxidizing the sugar produced and also the glycuronic acid elaborated after the elimination of the cocain and camphor. Wohlgemuth thinks that this case supplies the missing link in the demonstration of the primary origin of glycuronic acid.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

84 (XXX, No. 42.) *Erfahrungen über die therapeutische Wirkung der Radium-Strahlen. R. Werner and G. Hirschel.
85 Ultramikroskopische Untersuchungen. L. Michaelis.
86 Die Motilität des Magens bei Achylia gastrica. H. Elsner.
87 *Recent Progress in Treatment of Eclampsia. R. Glitsch. (Commenced in No. 41.) Summary of literature.
88 Ueber die Verwendung der Vibrations-Massage zur Ausführung von Schmierkuren (for inunctions). R. Ledermann.
89 Behandlung der Schenkelbrüche Neugeborener durch permanente Extension (for fractures of femur in the newborn). E. Riese.
90 Perityphlitis simplex und Perityphlitis virulenta. K. Lewin.
91 Simulation of Myosis by Children. W. Feilchenfeld.
92 Report of Sixth International Congress of Physiology. (Commenced in No. 41.)
93 *Die medicinische Publicistik. H. Kohn.

84. Radium Treatment.—Werner and Hirschel report the experiences at Czerny's clinic with 22 patients exposed to the action of 10 mg. of radium bromid. The cases included 5 of carcinoma, 1 of melanosarcoma, 2 of nevus, 5 of angioma, 7 of lupus, etc. The radium was always applied to the part in a capsule, fastened with adhesive plaster, from five to thirty minutes at a time. No effect was apparent in the malignant tumors, but in the benign and in the tuberculides the results were extremely satisfactory, and no recurrence has been apparent five to ten months after treatment. In lupus the exposures were longer, to a maximum of three hours. After these long exposures it was noticed that the nodules showed a more marked specific reaction than the epidermis, while with fractioned exposures the skin reacted more. It proved possible to cure a nodule by a single long exposure, without necrosis of the skin in some instances. This and other facts which they cite seem to suggest that inadequate treatment does harm instead of good, and that the ideal results should be sought by longer, unfractioned exposures. In malignant disease, especially, the rule should be to treat radically with the rays or not at all.

87. Progress in Treatment of Eclampsia.—Glitsch reviews 40 communications that have been published recently in regard to the treatment of eclampsia. Chloral by rectal injections seems to be useful, as is also the rinsing out of the stomach to remove toxic substances eliminated by this route.

93. Medical Publications.—Kohn comments on the multiplicity of current medical periodicals, Germany alone possessing 240, with a constant influx of new ones. He says that writing and research are not at all in proportion, so that there is no reason for so many journals. Many issues can be laid aside unread without fear of having missed something that is new and of real interest. As soon as some one subject assumes more than usual prominence a journal is devoted to its exploitation. Ere long, without any actual need for it, other journals appear, devoting themselves to the same line of thought. Kohn mentions that there are in Germany to-day 7 journals on gynecology, 5 on ophthalmology, 6 on pediatrics and 3 taking up the subject of prevention of tuberculosis, when one journal in each of these special fields would be more than sufficient to chronicle actual advances. Why then, he asks, is the market flooded with so many journals which are bound to react unfavorably on the progress of medicine. He condemns simultaneous publication of an article in a number of journals; the desire to write when there is nothing to write about; re-writing, with slight changes, of the same article so as to have an excuse for its publication, and appending to an article a lengthy but useless bibliography, a custom much in vogue at the present time. Many journals are kept alive by the advertisements alone; others by the desire of young men to appear before the public in print; others by articles written to please the editor or for some other extraneous reason. The consequence of all this flood of periodical literature is that readers, because of lack of time or for financial reasons, content themselves with the reading of abstracts and do not attempt to keep up with the endless procession of current literature. This is necessarily superficial, and leads to superficial reasoning, while an error in an abstract is perpetuated in other works based on it. As a remedy Kohn suggests that all teachers and research workers restrain their assistants and students from writing until they have a definite result to present, and to keep them from "padding" the articles, and physicians should not be ever ready to "favor" a young editor with an article just to help out, or to lend the weight of their name and authority to the exploitation of the journal.

Zeitschrift f. klinische Medicin, Berlin.
Last indexed page 291.

94 (LIII, Riegel Festschrift.) *Hyperacidity of Gastric Juice. C. v. Noorden.—Bemerkungen über Hyperacidität des Magensaftes und ihre Behandlung.
95 Ueber die cong. Dilatation und Hypertrophie des Dickdarms (Hirschsprung's disease). L. Erdelt.
96 Embolische Extremitäten-Gangrän nach Pneumonie. Ibid.
97 Ueber essentielle Albuminurie. C. Posner.
98 Neue Darstellung der Segment-Innervation des Menschlichen Körpers. L. Edinger.
99 *Zur Behandlung der Hämorrhoiden. Proebsting.
100 *Die Desinfektion der Gallenwege (biliary passages). F. Kuhn (Cassel).
101 *Salzsäure-Hyperacidität im Beginn von Magenkrebs (gastric cancer). V. Ziegler.
102 Ueber den Begriff der Anämie in klinischer Beziehung. E. Biernacki.
103 Fall von Allgemeininfektion durch Bacterium coli commune mit typhus-ähnlichem Verlauf und spätfolgender Hoden-Abcedierung (general infection and complications). W. Bauermeister.
104 Die inspiratorische Verkleinerung des Pulses (segen. Pulsus paradoxus). E. Reichmann.
105 *Ueber "digestive" oder "alimentäre" Hypersecretion des Magens (nebst Bemerkungen über Atonia et Ptosis gastrica). H. Strauss.
106 Zur Casuistik des menstruellen Ictorus. L. Metzger. One case.
107 Ueber homogen wachsende säurefeste Bacillen (cultivation of acid-proof bacilli). F. Rosenberger.
108 Zur Casuistik der Hämoglobinurie. E. Hoenberger.
109 *Ueber Polymyositis. W. Streng.
110 Bemerkungen zur Arbeitstabehandlung Nervenkranker (occupation treatment of nervous affections). M. Laehr.
111 Ueber das pathologische Element in der Criminalität der Jugendlichen. P. Tuczek.
112 Ueber Verdoppelung der Herzfrequenz nebst Bemerkungen zur Analyse des unregelmässigen Pulses (depliation of heartbeat). A. Hoffmann.
113 Ueber unregelmässige Herzthätigkeit auf psychischer Grundlage (emotional cardiac irregularity). O. Reimeser.
114 *Property of Digitalin to Reduce Sensibility of Myocardium to Artificial Stimuli. K. Brandenburg.—Ueber die Eigenschaft des Digitalin, in nicht tödlicher Gabe die Ansprechfähigkeit des Herzmuskels für künstliche Reize vorübergehend zu vermindern.
115 Ueber Hämolyse durch Carcinom-Extrakte. Kullmann.

116 Zur Casuistik der Embolie und Thrombose der Mesenterial-Gefässe. K. Oswald. Two cases.

117 *Ueber seltene Complikationen der Ruhr (dysentery). B. Martwald.

118 Ueber die therapeutische Anwendung des Aderlasses (venesection). W. Bruner.

119 Casuistischer Beitrag zur Lehre von der motorischen Aphasie. Herzog.

120 Zur Frage der Resorption aus den Geweben (from tissues). M. Jänniger.

121 Zur Symptomatologie des Magenkrebses und zum Vorkommen der Tetanie bei Magenkrankheiten (gastric cancer). G. Honigmann.

122 *Zur Lehre von der Tetanie bei Magenerweiterung (with dilatation of stomach). H. Richartz.

123 Die diätetische Behandlung der Epilepsie in Vergangenheit und Gegenwart. K. Alt.

124 Intake of Oxygen Through Skin. G. Zuelzer.—Die Sauerstoffaufnahme durch die Haut.

125 *Ueber den Einfluss gefässerweiternder Massnahmen und geeigneter Muskelleistung bei chronischer, interstitieller Nephritis und ihre Bedeutung für die Therapie derselben (vasodilating measures in nephritis). F. Edel.

126 *Ueber das Vorkommen von langen Bacillenfäden (Boas-Oppler) Bacillen in Blutgerinnseln des Magenmhalts und deren Bedeutung für die Frühdiagnose des Magen-Carcinoma (gastric carcinoma). S. Heichelheim.

127 Limitation of Utilization of Albumin in Gastric Affections. v. Tabora.—Grenzwerte der Eiweissausnutzung bei Störungen der Magensecretion.

128 Ueber ventrikuläre Bigeminie ohne kompensatorische Pause durch rückläufige Herz-Contractionen (alternierende Tricuspidal-Insufficienz, Pseudosystolia alternans?). F. Volhard.

94. Treatment of Hyperacidity of Stomach.—Von Noorden has witnessed extremely favorable results from forced feeding supplementary to the ordinary measures, in cases of acid gastric catarrh and ulcus. In hyperacidity in poorly nourished subjects, he has also found forced feeding useful in conquering the existing hyperacidity. It sometimes cures without any other measures. In 3 cases of hyperacidity described there were no subjective disturbances. In 3 others the hyperacidity was accompanied by obstipation. The secreting processes were restored to normal in these cases by curing the obstipation, which was accomplished by laxative mineral waters and dieting. He regarded the hyperacidity as merely secondary, and the results of treatment on this basis confirmed its correctness. In case of gastric ulcer his measures are very strict for eight or ten days. He then rapidly pushes the nourishment, sometimes reaching 3,500 to 4,500 calories a day by the end of the second week, making extensive use of fats. He is convinced that this accomplishes as much as the Leube technic, while it has the advantage that it invigorates and restores the patient more effectually. As a rule, he gains 10 to 15 pounds on this treatment when previously reduced.

99. Treatment of Hemorrhoids.—Proebsting attributes the disturbances of hemorrhoids to retention of feces in and around the sphincter. He thinks that the best treatment is by cleansing rectal injections after defecation, preferably with cold water, although tepid water can be used if cold is not tolerated. He teaches his patients how to make "the toilette of the anus" with a small bulb syringe, and many have been entirely relieved of all hemorrhoidal disturbances by this simple measure.

100. Disinfection of Biliary Passages.—Kuhn's announcements in regard to the efficient sterilization of the biliary passages with the salicylates was summarized in these columns, page 1095.

101. Hyperacidity in Incipient Gastric Cancer.—Ziegler has observed 5 cases in which uncomplicated hyperchlorhydria with normal motor functions preceded the development of a cancer of the stomach. He is convinced that carcinoma should be suspected when hyperacidity exists rebellious to all the usual measures, such as regulating the diet, lavage, bismuth, atropin, alkalies, etc. The diagnosis is almost certain when motor disturbances become superposed on the hyperchlorhydria. A repugnance to meat generally accompanies the hyperchlorhydria. The subjects are usually past the age when the latter is most common.

105. Digestive or Alimentary Hypersecretion in Stomach.—Strauss remarks that the determination of this condition requires consideration of a number of circumstances. There is evidently a close connection with hyperacidity and ulcer, and it seems to be more frequent in cases with dilatation of the stomach than without. It has no direct connection with motor insufficiency, although it may outlast it, but in this case merely as an expression of the irritation of the mucosa from stagnating stomach contents. The etiology of the "digestive" hypersecretion is liable to be multiple, and removal of the cause is the first indication in treatment. When induced by gastroptosis, forced feeding may prove more useful than bandages, as it relieves the general asthenia and may restore normal conditions throughout. When dependent on a hernia, surgical treatment of the latter is indicated. Symptomatic treatment should be the same as for hyperacidity. Milk is useful, but a strict milk-vegetarian diet is required only when the manifestations of general neurasthenia or obstipation predominate in the clinical picture. Improving the intestinal functions frequently improves at the same time the hyperacidity or "digestive" hypersecretion. The Carlsbad cure is particularly useful for this purpose.

109. Polymyositis.—The postmortem findings in the case described showed numerous hemorrhages and interstitial inflammatory processes throughout the muscles involved. There were also inflammatory processes in certain joints. There was a history of preceding grippe.

114. Reduction of Sensibility of Myocardium by Digitalin.—Through all Brandenburg's experimental research one phenomenon was constantly observed, namely, that a small amount of digitalin injected under the skin temporarily diminished the response of the heart muscle to stimuli of various kinds, while it increased its contractility. He discusses the clinical significance of this fact. Among other points brought out is that digitalin is contraindicated in cases in which the irregularity of the pulse is due to morbidly increased automatic action of parts of the heart which normally do not develop movement stimulus. This class of cases includes certain forms of pulsus bigeminus in neurasthenic subjects. Digitalin in such a case would only exaggerate the morbid tendency of the heart muscle to independent action at the atrio-ventricular boundary.

117. Rare Complications of Dysentery.—The complications were urethritis, double conjunctivitis, rhinitis and severe iridocyclitis. The Shiga bacillus was agglutinated strongly even at 1 to 320.

122. Tetany with Dilatation of Stomach.—Only 42 cases are known of tetany in connection with dilatation of the stomach. Richartz describes another case. It was remarkable for the facts that the tetany developed after lavage of the extremely dilated stomach, and that it vanished completely after removal of a colloid carcinoma in the stomach. At the laparotomy several cherry stones were found in the stomach and 90 plum stones. The patient had not eaten any plums for a year or so, and asserted that it had been many years since she had been in the habit of occasionally swallowing a plum stone.

125. Vasodilating Measures in Chronic Nephritis.—Edel summarizes the aims of therapeusis in chronic interstitial nephritis as, 1, the reduction of the blood pressure by vasodilating measures, such as rest in bed, warm and carbonated baths, amyl nitrite and nitroglycerin; 2, permanent strengthening of the heart by suitable exercises, and, 3, systematic measures to restore tone to the nervous system. The albuminuria diminishes with decreasing blood pressure. Mountain climbing is particularly useful as an exercise to strengthen the heart, both by the muscular exercise and by the dilatation of the vessels in the muscles and skin, but high altitudes should be strictly avoided. Nervous influences, emotions, etc., affect the blood pressure by contracting the arteries. It is not improbable that the heart itself may suffer from this cause. These nervous influences should be counteracted by tranquilizing the patient, reassuring his alarm at the discovery of the albuminuria. Obesity should be reduced. Seven patients treated on these principles were much improved.

126. Boas-Oppler Bacilli as Sign of Cancer.—Heichelheim announces from an experience with 6 cases of gastric carcinoma that the long thread bacilli can be most easily discovered in the dark brown clots of blood in the stomach content. Re-

gested findings of blood clots in the stomach contents, with unusually large proportion of free HCl, speak for cancer, and the diagnosis is almost positive when the thread bacilli are very numerous. If they are scanty the diagnosis should be cautiously formulated.

Crouica Medica, Lima, Peru.

Last indexed XLII, page 1288.

129 (XX, No. 355.) Enfermedades evitables (avoidable diseases). E. Bysaguirre.

130 (No. 356.) Sobre la hematologia de la enfermedad de Carrion. I. C. Gastiaburu.

131 (No. 366.) La tuberculosis y la defensa antituberculosa. E. Escomel.

132 (No. 367.) La peste Bubonica en el Callao. A. Castaneda. (Commenced in No. 362.)

133 (No. 368.) °Ejecucion de las penas en caso de enfermedad sobrevinlente (execution of sentence in case of intercurrent disease). L. Avendano.

134 (No. 369.) Accidentes secundarios de la sifilis que simulan una infeccion septicemica de marcha sobreaguda. L. A. Lopez.

135 (No. 370.) Traumatismo del craneo. Fractura de la boveda: hernia cerebral. Intervencion quirurgica. Curacion. E. A. Vietl.

136 (No. 372.) °Un procedimiento sencillo para determinar la coagulabilidad de la sangre (of the blood). U. Biffi.

137 (No. 374.) Caso de desprendimiento total de la placenta por traumatismo. J. A. San Bartholme.

138 (No. 375.) Preparacion de soluciones normales acidas y alcalinas. A. C. Garcia.

139 (No. 376.) Sobre los precipitados por coagulacion y sobre algunas propiedades del suero sanguineo diluido (coagulation and other properties of diluted serum). U. Biffi.

133. Intercurrent Diseases During Imprisonment.—Avendano presented this article at the last Latin-American Congress. He urged a conference to agree on uniform measures in case of intercurrent diseases affecting criminals undergoing sentence. Provision should be made, he thinks, for the execution of the sentence to be suspended during a serious intercurrent disease or insanity, until the subject has recovered under treatment in a hospital or other safe place. The time of the duration of the disease should be deducted from the period for which he was sentenced. His final plea is that small prisons should be erected at various points in each country, instead of large central prisons, in order that the prisoners may live in the climate to which they are accustomed.

136. Simple Mode to Determine the Coagulating Power of the Blood.—Biffi gives an illustration of a simple apparatus which consists of an ordinary test tube, about 20 to 25 cm. long and 4 cm. in diameter. The stopper of the tube has two openings, one holds a thermometer which projects nearly to the center of the tube. A glass rod passes through the other hole, just projecting into the tube, but carrying a platinum wire .5 mm. thick and 10 cm. long. This wire is bent into five small, round loops, each 3 to 4 mm. in diameter. This takes up the wire so that the lower end reaches downward only a little below the thermometer, each just above the middle of the tube, which is filled half full of water. A drop of blood is drawn from the finger, and each of the five loops is touched to the blood, which rapidly spreads out and fills each loop. The stopper is then replaced in the test tube and the time noted, the temperature of the tube being kept at 68 to 77 F. At certain intervals the glass rod is pushed downward through the stopper, just far enough to bring one of the loops under the surface of the water. If the blood has not coagulated it diffuses into the water. Again the rod is pushed down after a similar interval, and so on, until the blood has completely coagulated, when it no longer diffuses, but shows as a firm round disc in the loop below the surface of the water. In normal conditions coagulation is complete in seven to ten minutes. Biffi has compared the findings with those of the more complicated apparatus for determining the coagulability of the blood, and found that they paralleled each other with great precision. He calls the instrument the hemogelometer.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRACTICAL MEDICINE SERIES OF YEAR BOOKS, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-graduate Medical School. Vol. VIII. Materia Medica and Therapeutics, Preventive Medicine, Climatology, Suggestive Therapeutics, Forensic Medicine. Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., Norman Bridge, A.M., M.D., Daniel R. Brower, M.D., Harold N. Moyer, M.D., July, 1904. Volume IX. Physiology, Pathology, Bacteriology, Anatomy, Dictionary. Edited by W. A. Evans, M.S., M.D., Adolph Gehrmann, M.D., William Healy, A.B., M.D. August, 1904. Vol. X. Skin and Venereal Diseases, Nervous and Mental Diseases. Edited by W. L. Baum, M.D., Hugh T. Patrick, M.D. September, 1904. Chicago: The Year Book Publishers.

THE MEDICAL NEWS VISITING LIST, 1905. Weekly (Dated for 30 Patients); Monthly (Undated for 120 Patients per Month); Perpetual (Undated, for 30 Patients Weekly per Year); 60-Patients (Undated, for 60 Patients Weekly per Year). The Weekly, Monthly and 30-Patient Perpetual Contain 32 Pages of Data and 160 Pages of Classified Blanks. The 60-Patient Perpetual Contains of 256 Pages of Blanks Alone. Each in One Wallet-shaped Book, Bound in Flexible Leather, with Flap and Pocket, Pencil and Rubber, and Calendar for Two Years. Price, $1.25. Thumb-letter Index, 25 cents extra. By mail, postpaid, to any address. Philadelphia and New York: Lea Brothers & Co.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS: with Especial Reference to the Application of Remedial Measures to Disease and Their Employment as Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With Special Chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (10th) Edition, Much Enlarged, Thoroughly Revised and Largely Rewritten. With 118 Engravings and 4 Full-page Colored Plates. Cloth. Pp. 908. Price, $4.00 net. Philadelphia and New York: Lea Brothers & Co. 1904.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By Olof Hammarsten, Professor of Medical and Physiologic Chemistry in the University of Upsala. Authorized Translation from the Author's Enlarged and Revised Fifth German Edition by John A. Mandel, Sc.D., Professor of Chemistry and Physics and of Physiologic Chemistry in the New York University and Bellevue Hospital Medical College. Fourth Edition. Cloth. Pp. 703. Price, $4.00. New York: John Wiley & Sons. 1904.

A TREATISE ON BRIGHT'S DISEASE AND DIABETES, with Especial Reference to Pathology and Therapeutics. By Robert Tyson, M.D., Professor of Medicine in the University of Pennsylvania. Second Edition, Illustrated. Including a Section on the Ocular Changes in Bright's Disease and in Diabetes. By George E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania. Cloth. Pp. 581. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1904.

A TEXT-BOOK OF QUANTITATIVE CHEMICAL ANALYSIS BY GRAVIMETRIC, ELECTROLYTIC, VOLUMETRIC AND GASOMETRIC METHODS. With Seventy-two Laboratory Exercises, Giving the Analysis of Pure Salts, Alloys, Minerals and Technical Products. By J. C. Olsen, A.M., Ph.D., Professor of Analytical Chemistry in the Polytechnic Institute of Brooklyn. Cloth. Pp. 513. Price, $4.00 net. New York: D. Van Nostrand Co. 1904.

THE PRINCIPLES OF REFRACTION IN THE HUMAN EYE BASED ON THE LAWS OF CONJUGATE FOCI. By Swan M. Burnett, M.D., Ph.D., Professor of Ophthalmology and Otology in the Georgetown University Medical School. Illustrated with 25 Original Diagrams. By Charles F. Prentice, M.E. Cloth. Pp. 85. Price, $1.00 net. Published by the Keystone, the Organ of the Jewelry and Optical Trades, Philadelphia. 1904.

THE ART OF COMPOUNDING. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph.G., Formerly Professor of Theory and Practice of Pharmacy in the Massachusetts College of Pharmacy. Third Edition, Revised and Enlarged. Cloth. Pp. 337. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co. 1904.

ACCIDENTS AND EMERGENCIES. A Manual of the Treatment of Surgical and Medical Emergencies in the Absence of a Physician. By Charles W. Dulles, M.D., Fellow of the College of Physicians of Philadelphia. Sixth Edition, Thoroughly Revised and Enlarged. With New Illustrations. Cloth. Pp. 209. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co. 1904.

MULTIPLE PERSONALITY, an Experimental Investigation into the Nature of Human Individuality. By Boris Sidis, M.A., Ph.D. (Harvard), Author of "The Psychology of Suggestion" and "Psychopathologic Researches, and Simon P. Goodhart, Ph.B. (Yale), M.D. Cloth. Pp. 456. Price, $2.50 net. New York: D. Appleton & Co. 1906.

A COMPEND OF MEDICAL LATIN. Designed Expressly for Elementary Training of Medical Students. By W. T. St. Clair, A.M., Professor of the Latin Language and Literature in the Male High School of Louisville, Ky. Second Edition, Revised. Cloth. Pp. 131. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co. 1904.

SURGICAL EMERGENCIES. THE SURGERY OF THE ABDOMEN. Part I. Appendicitis and Other Diseases About the Appendix. By Bayard Holmes, B.S., M.D., Professor of Surgery in the University of Illinois. Paper. Pp. 349. Price, $2.00 net. New York: D. Appleton & Co. 1904.

TRANSACTIONS OF THE THIRTY-SEVENTH ANNUAL SESSION, WEST VIRGINIA STATE MEDICAL ASSOCIATION, Held at Fairmont, W. Va., May 10, 11 and 12, 1904. Instituted April 10, 1867. Paper. Pp. 300. Wheeling News Litho. Co. 1904.

PROCEEDINGS OF THE CONNECTICUT MEDICAL SOCIETY, 1904. One Hundred and Twelfth Annual Convention Held at New Haven, May 25 and 26. Published by the Society. Cloth. Pp. 576. 1904.

THE PRINCIPLES OF RELIEF. By Edward T. Devine, Ph.D., LL.D., Author of "The Practice of Charity." Cloth. Pp. 495. New York: The Macmillan Co. 1904.

SPEMANN'S HISTORISCHER MEDICINAL-KALENDER. Bearbeitet von Prof. Dr. J. Pagel und Prof. Dr. J. Schwalbe, in Berlin. Paper. Pp. 183.